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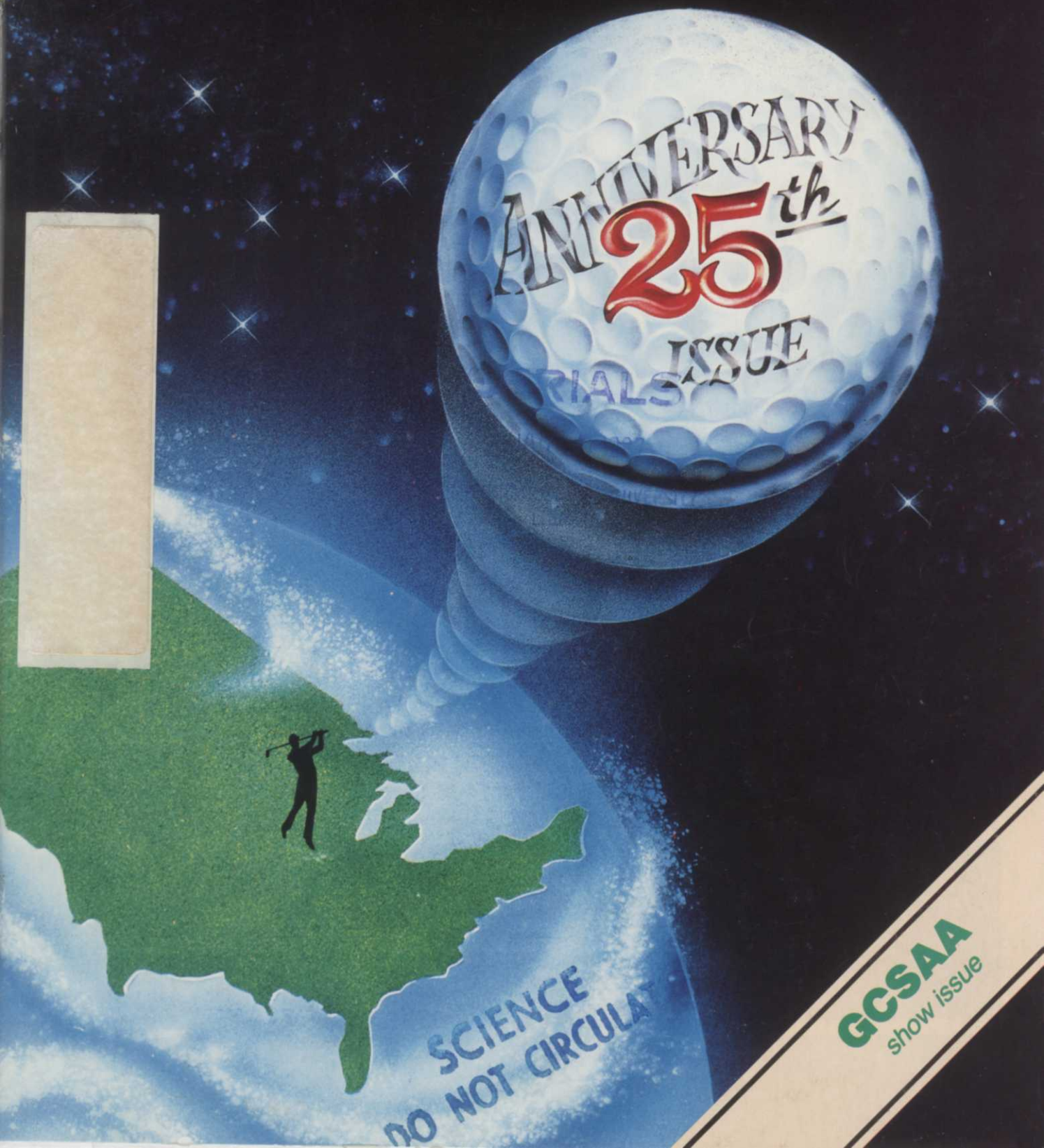
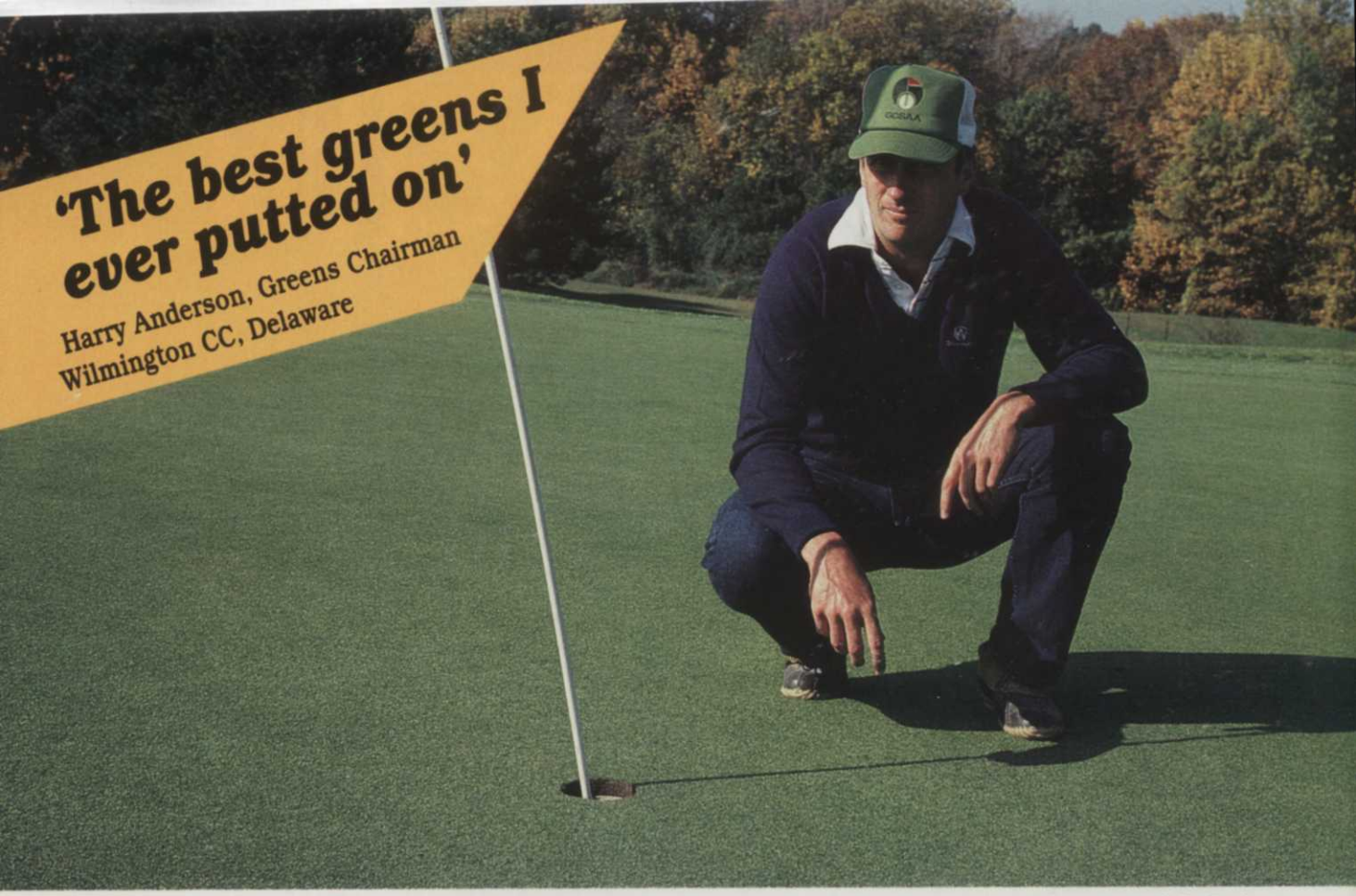
WEEDS TREES & TURF

The magazine of **LANDSCAPE** MANAGEMENT



GCSAA show issue



David Kroll, CGCS, inspects one of 18 PennLinks greens at Wilmington CC, Delaware

PennLinks creeping bentgrass – working wonders at Wilmington

New bentgrass variety provides a truer putting surface at Wilmington CC.

When David Kroll, CGCS, was dealt the problem of bentgrass

This Wilmington green was seeded in early '60s with poor quality seed fraudulently labeled Penncross. All the greens deteriorated to the point that they had to be entirely renovated.

deterioration on the greens of this prestigious country club, he called in the experts to help. The greens could not be salvaged, so they were treated with methyl bromide and completely re-greened.

Dr. Joe Duich, Penn State University, suggested seeding with a bentgrass coded PSU 126.

Two and a half years later, the greens look great and with PennLinks' more upright growth pattern, putt like a dream. That experimental variety is now named PENNLINKS, and is available in limited quantities.

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JANUARY 1987, VOLUME 26, NUMBER 1

WEEDS TREES & TURF

The Magazine of **LANDSCAPE** MANAGEMENT

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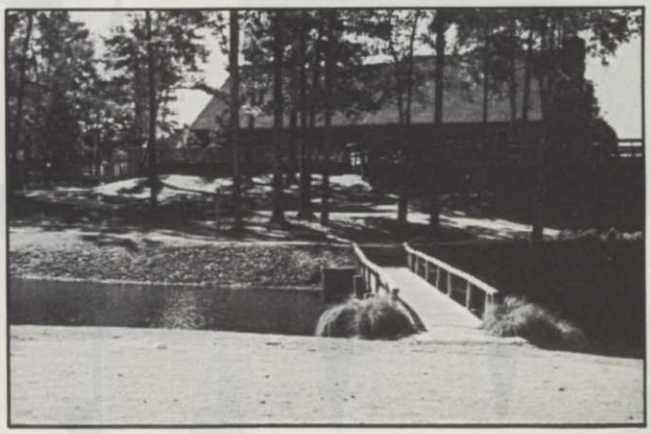

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Many golf course superintendents could be uttering that phrase in the not-too-distant future. But it's not water they'll be drinking.

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Rich in tradition, Druid Ridge cemetery in Baltimore is a unique 230 acres. Its unique head landscaper could be the reason.

80 DIVINE DIVISIONS
More and more, major companies are moving their division headquarters to country settings. Here's a look at what AT&T and Mobil Oil have done.

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Good salaries alone are not enough to motivate employees. Special incentives should be required for exceptional performance.

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Cover illustration by Joel Rogers

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A new hazard to avoid on the links

■ Real estate and golf course developers are giving new meaning to the phrase: "playing in your own back yard."

It is becoming increasingly common to see private golf courses being designed around housing communties, stirring changes in both the way we play and the way we live.

National Golf Foundation figures show that in 1985, 39 percent of the nation's 13,000 golf courses were private, but this is changing. "Golf courses can convert marginal land into prime land," John Rooney, a professor at Oklahoma State University, said in a *Wall Street Journal* article.

Gerald Barton, CEO of Landmark Land Co., a leading developer of golf communities, echoes the sentiments of many would-be homeowners. "I've never hit a golf ball, and I don't know anything about the game," he says, "But I'd like to live on a golf course."

Golf legend Jack Nicklaus has also gotten in on the act. A 3½-year partnership with Tampa businessman J. Robert Sierra has led to a number of these communities, including six presently in the works. All include high-priced private housing built around a Nicklaus-designed course.

Work began on one of these projects, the Country Club of the South near Atlanta, last year. The 800-acre, 600-family community, built around a 200-acre golf course, will be walled or fenced, with 24-hour security.

Although the golf course is expected to be the loss leader, profits from the land sale will more than make up for it. The total project cost is estimated at $45 million, with projected property sales of $78 million. Of the 200 lots in the first-lot phase, 165 have sold. Sierra expects the project to take eight years to sell out.

The natives are restless and growing

■ Native wildflower gardens are sprouting up around homes across the country. Homeowners are taking advantage of a wide range of American wildflower and shrub species with texture, color, size and shape to match anything from around the world.

"Until recently, nurseries, and garden centers didn't carry many native species; and to landscape architects, using native species was a novel idea," says Leo Collins of the Tennessee Valley Authority (TVA).

This new American revolution is still in its infancy, though. About 80 percent of all nursery and garden material available in the TVA area is still exotic. But, Collins says, wholesalers and retailers are beginning to adjust to consumer changes.

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LAWN CARE

Is new protective clothing on the horizon?

Personnel from Dow Chemical Co. will be investigating the possibility of a new protective leg sleeve for liquid pesticide applicators, according to Dow's Dr. Jim Vaccaro.

"The lawn care industry has the greatest exposure to chlorpyrifos (Dursban) than any other industry, mainly on the lower leg," Vaccaro told LCOs who attended the Professional Lawn Care conference in Baltimore. "But a sleeve can be constructed to limit LCOs to practically no exposure. We are going to a clothing manufacturer to see what the possibility is of getting this type of protective clothing made. Then we're coming to the lawn care industry."

Vaccaro said that pants serve as protection. But, he warned, "when they become saturated, they act like a cuff and actually push the material through the skin."

According to Dow research conducted by Dr. Vaccaro and his associates, the average lawn care applicator is exposed to 241 milligrams of material per working day, including about 135 milligrams on the skin. Hand/wrist deposits account for 44.9 percent of the exposure and lower leg deposits account for 42.4 percent. However, urinary biomonitoring tests reveal that only two milligrams is absorbed into the body, nearly all of which quickly passes through the human waste system.

Dr. Jim Vaccaro: "a sleeve can be constructed"

The Threshold Limit Value (TLV) for human exposure to chlorpyrifos is 2,400 milligrams per working day. That is the highest amount of chlorpyrifos a person could be exposed to every working day for a working lifetime *without* having any adverse effects.

In another development at the PLCAA show, 35 percent of the LCOs responding to a *Lawn Care Industry* magazine survey say that they will copy ChemLawn this season and post signs after applying pesticides to residential lawns.

ChemLawn, the nation's largest lawn care company, said late last year that it would post every home it treats this summer, in the face of continued negative publicity about lawn care services.

The survey also revealed that 28 percent of the LCOs responding to the written questionnaire believe phenoxy herbicide use would decrease in 1987, though 55 thought it would remain the same. The remainder (17 percent) think it will increase.

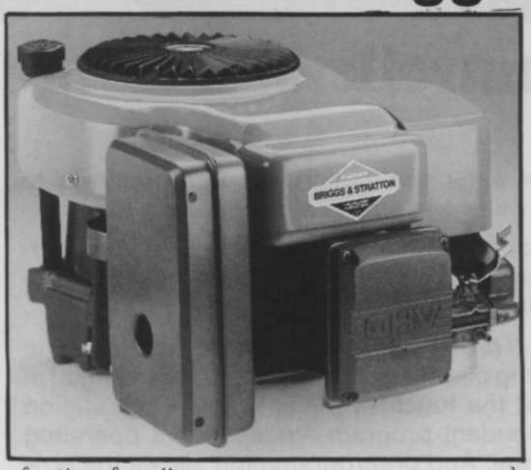
PRODUCTS

Overhead valve new for Briggs & Stratton

Briggs & Stratton will unveil its first overhead valve (OHV) engine, the first in its class, this month at the Phoenix Golf Course Superintendents trade show.

The 12½ hp vertical shaft engine was designed specifically to supply the commercial turf equipment and premium consumer tractor and riding equipment markets, niches that have lacked engine options.

"This new OHV is a result of feedback we got from customers, end product users as well as our original equipment manufacturers," says Douglas W. Anderson, Briggs & Stratton vice president of sales.



The result is that the new engine delivers more power than other engines rated in this power range. "What we are especially pleased with," says Anderson, "are the winning features that our customers told us they wanted—a powerful engine in a compact configuration, quiet, with good sound quality, and just about vibration-free."

The Briggs & Stratton engine design includes full pressure oil lubrication, a system which can also allow extension of maintenance intervals, and fuel and oil efficiency.

"A major key to this engine, and others planned for the entire line," explains Patrick Reardon, Briggs & Stratton marketing manager, "is in the torque rise. This engine responds to meet varied cutting conditions without stalling or backing down."

The new engine provides a tapped hole that could be attached to an oil pressure switch, two-quart oil capacity and an optional spin-on oil filter. All user-serviceable parts are accessible from the top to make regular maintenance convenient. A grass-ejecting intake screen prevents the plugging of air cooling passages. The engine's governed idle feature allows blade engagement at idle speeds.

Cooler carburetor temperatures are assured by the ducted intake; the low mounting of the carburetor allows for the use of a larger gravity-fed fuel tank and helps prevent vapor lock.

The engine has an optional fuel pump and can be equipped with either single cable control or separate choke and throttle controls.

The engine, now in field testing and evaluation, will be available on equipment in late 1987.

Kevin Hyland (left) and George Bigham test the Mod Sod practice green at Oakwood Country Club.

GOLF

Artificial surfaces developed as possible alternatives to sand

At least two types of artificial surfaces are available in the golf industry as alternatives to sand greens.

One, Mod Sod, is being used at Oakwood Country Club in Cleveland, Ohio. The other, OmniGreen, is getting good results at Tennis Courts of New Hampshire in Tilton, N.H.

"These (artificial surfaces) are much better than you think," says Rich Labarre, operations manager at Tennis Courts of New Hampshire. "We've installed a dozen or more with complete satisfaction."

George Bigham, club pro at Oakwood, says that Mod Sod greens can be designed for any speed. The practice green at Oakwood stimps at nine. "It's best in high-volume situations when maintaining greens is cost-prohibitive," he notes.

Besides use as a golf green, these artificial surfaces can be used indoors in pro shops, for golf car paths or for driving range tees.

Mod Sod was invented by professional golfer Fred Haas. It consists of 1⅜-inch polypropylene fiber filled with sand. The sand, usually dyed green, is then highly compacted to provide whatever speed is desired. The fiber is UV-stabilized and comes with a five-year guarantee.

Mod Sod's base is a patented combination of sand, cork, rubber and other ingredients. Kevin Hyland of Hyland Landscaping in South Euclid, Ohio, says the combination prevents compaction, which is prevalent in sand-only bases.

Mod Sod is sold in the United States by Bigham and Hyland. For more information, call Bigham at (216) 291-0679 or Hyland at (216) 382-4438.

OmniGreen, which is featured at Wee Links Golf Course at Walt Disney World, comes in three sizes and two shapes. It is sold as "a beautiful addition to your backyard." The product is made of a patented Omnifiber surface with a specially formulated sand dressing and is endorsed by the PGA Tour.

OmniGreen is manufactured by Sportec International. For more information, dial (800) 835-0033.

HERBICIDES

Harvard disputes Kansas 2,4-D study

Noted American philosopher and former professional baseball player Yogi Berra once said: "It ain't over 'til it's over." This statement seems to apply well to the 2,4-D controversy.

A recent report in *Agrichemical Briefing* newsletter states that one of four EPA-commissioned studies, this one done by Harvard epidemiologist Brian MacMahon, disputes the conclusions reported in the original Kansas/National Cancer Institute study, which linked the herbicide to cancer. The other three studies have given conflicting

continued on page 11

1-2-3

The recent negative attack on chemicals is unfounded, according to Dr. John Kaufmann of the Monsanto Chemical Corp. research and development department.

"We've got to go beyond the idea that we can wow people with statistics as to how safe chemicals are," Kaufmann told the Missouri Lawn and Turf Conference. "All chemicals are toxic. The degree of injury is related to the amount to exposure. All chemicals can be used safely if the exposure is controlled to prevent toxic effects."

Kaufmann says first the applicator needs to be aware of how exposure happens.

Applicator exposure occurs in two ways:

1. Handling and mixing;

2. Application.

Environmental exposure also occurs in two ways:

1. On-site targeting through

- foliar absorption;
- thatch absorption;
- soil absorption.

2. Off-site movement through

- vaporization;
- soil penetration;
- runoff.

Kaufmann gives these helpful hints for avoiding exposure problems:

1. Always read the label.

2. Observe all precautions.

3. Apply the chemical according to label directions.

4. Know the product's benefits and safety features.

5. Share this information with your customers or golf course members.

Kaufmann quotes Bruce Ames, of the University of California at Berkeley, who says that "more than 99 percent of the carcinogens are from naturally occurring substances. Less than one percent are man-made."

"1-2-3," a column describing pesticide safety "by the numbers," is a regular feature of WT&T.

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2,4-D *from page 7*

of the Kansas findings.

Reports by two staff members of the University of Iowa School of Medicine differed somewhat. Dr. Donald P. Morgan opposed the study, and Dr. Leon Burmeister's report was inconclusive. A third report, from Dr. Martha Linet of Johns Hopkins University, was in favor of the Kansas study.

When the Kansas study was released in September, the EPA commented "the study is well thought out and that the conclusions are supported by the data."

Or were they? Since the EPA had no staff epidemiologist, it commissioned the four studies. MacMahon didn't finish his study until September 29, a full week after the EPA warned of the possibility of a special review of 2,4-D. A special review is the first step toward a possible revision of a product's user status.

When MacMahon finally finished his report, the EPA decided not to release it, maybe because MacMahon said in his report: "In my opinion, the weight of evidence does not support the conclusion that there is an association between exposure to 2,4-D and non-Hodgkin's lymphoma."

MacMahon believes that the weight of the evidence does not support the Kansas study's claims sufficiently, and therefore the 2,4-D-cancer link remains a hypothesis.

ATHLETIC TURF

Joe Torre keynoter at STMA conference

Sports broadcaster Joe Torre will be the keynote speaker at the Sports Turf Manager's Association annual meeting to be held Jan. 31 in Phoenix.

The STMA conference, in conjunction with the GCSAA show, will be held at the Hyatt Regency. Kick-off time for the program is 8 a.m.

Joe Torre

Torre, the former major league baseball player and manager who is a broadcaster with the California Angels, will speak at the STMA awards dinner beginning at 7:30 p.m. Price of the dinner is $30.

Harry Gill, director of grounds at Milwaukee County Stadium, and Jeff Wishard, who was paralyzed in a football accident, will receive awards at the dinner.

The STMA daytime program runs from 8 a.m. to 5 p.m. Topics on the program include talks by Dr. Fred Grau on the future of athletic turf; attorney Dan Holland on developing a standard for turf surfaces; and Dr. Eliot Roberts on the steps for achieving safer athletic turf.

Afternoon concurrent sessions include detailed seminars on baseball fields, soccer and football fields, specialized sports turf and drainage, equestrian surfaces and athletic turf herbicides.

For more information on attending the conference, contact Dr. Kent Kurtz at (714) 984-4677 or (714) 869-2176.

CONVENTIONS

Landscape Expo deadline approaching

The 1987 edition of the Landscape Ex position will feature an expanded

continued on page 14

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SHORT CUTS

SPORTS MANIA... Charlie Racusin of Environmental Landscape Services, Houston, is a sports nut. But he's also a good businessman. The result? A booming landscape company and plenty of tickets to athletic events. Racusin, besides taking in the games themselves, gives out freebie tickets to his best clients. For instance, last fall, he bought 42 tickets to each of the Houston Astros' NL Playoff Series games against the New York Mets. "There's not a week that goes by that we don't give a client something for free," Racusin reports. And it apparently works.

CHARGE IT... Landscape managers will soon be able to purchase equipment by whipping a piece of plastic out of their back pocket and saying "charge it." Bob Brophy, new landscape product manager at Cushman Ryan, says the company might be instituting a credit card program for the green industry. The credit cards could be used for any line of Cushman equipment.

FUTURE SHOCK...A system being developed by Electrofac Corp., Kansas City, Mo., could add a new dimension to the battle against insects: electrocution. The system, which fries insects without toasting leaves, is possible because most plants can shrug off enough electricity to get rid of the pests. A diesel-powered generator moves through fields, carrying a tunnel of charged metal plates over rows of plants. A current moves through the plant when the leaf touches the metal, killing insects on the plant and in the earth near the roots.

PESTICIDE PICTURE SHOW...A video series teaching landscape pesticide safety has been developed by Idea Bank for employees of organizations handling landscape chemicals. The two videos in the series, entitled "Working With Pesticides," deal with in-field safety and meeting OSHA requirements for handling hazardous substances. Cost is $149.95 postage paid. Contact The Idea Bank (800) 621-1136. In Arizona, call (602) 829-1233. By mail, send payment or purchase order to The Idea Bank, Pesticide Videos, 1000 E. Apache Blvd., Suite 211, Tempe, AZ 85281.

COLOR CALENDAR... Brouwer Turf Equipment is offering a free four-color 1987 year-at-a-glance turfgrass industrial calendar that includes turf industry shows and convention dates. Contact Brouwer at Woodbine Ave., Keswick, Ontario L4P 3E9.

FERTILIZER FRENZY... There's a movement in the green industry to try to convince fertilizer companies to express pure phosphorous and pure potassium content on the bags. The three numbers on the bag are nitrogen, phosphate and potash. Phosphate and potash are the oxidized forms of phosphorous and potassium, respectively. Dr. Larry Leuthold of Kansas State University says, as things stand now, these conversion formulas must be used: to convert P_2O_5 to P multiply by .44; to convert K_2O to K multiply by .83.

CONVENTIONS *from page 11*

show from last year's. In all, 225 exhibitors will show their stuff at the Expo, Tuesday through Thursday, March 3-5 at the O'Hare Exposition Center in Rosemont, Ill.

In addition, a greatly expanded conference program will run the full gamut of topics: from the business side to the legal side to the field side.

Joining last year's standout speakers, industry experts Dr. Rudd McGary and Ed Wandtke of All-Green Management Associates, will be Dr. Marty Petrovic of Cornell, James Leatzow of Leatzow Agency/Financial Guardian, attorney Richard Lehr and Dr. Ray Freeborg of Purdue.

Deadline for attendee pre-registration is Feb. 10. Conference hours run from 8 a.m. to 5 p.m. all three days. The Expo hours are 9:30 a.m. to 4 p.m. Tuesday and Wednesday, and 9:30 a.m. to 3 p.m. Thursday.

If traveling by air to the Expo, call Travel Planners, Inc., the official travel agency of the Landscape Expo. They are guaranteeing up to 45 percent savings on full coach fares on American Airlines, though some restrictions may apply. If your airport is not serviced by American, call anyway. Travel Planners can still provide discounted fares on most carriers. Seats will be going fast, so call (800) 221-3531 or in New York, call (212) 473-4688.

LEGISLATION

Restrictive law is passed in California

Commercial pesticide users in California are waiting for the governor to tell them which pesticides they can't use. On Nov. 4, voters approved Proposition 65, the Safe Drinking Water and Toxics Enforcement Act.

Businesses with 10 or more employees will not be allowed to use any chemical defined as carcinogenic or potentially carcinogenic if there is any possibility that it could contaminate groundwater.

Government entities are exempt.

A citizen right-of action clause enables anyone to bring action to enforce the law. It also includes a "bounty hunter" proposition: private citizens who bring enforcement will receive 25 percent of any penalties collected by the state.

Steve Hardymon of ChemLawn said a preliminary list of carcinogenic chemicals supplied by the state included only two chemicals his company uses. And those are not critical to operations.

continued on page 18

There's no better value for crabgrass control than Balan. And none with more experience. It's been used more years by more golf course superintendents than any other granular preemergence herbicide.

Its easy-to-spread clay carrier is one reason why. It makes application more uniform, reduces the dust common in other carriers and also increases your equipment calibration accuracy.

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Balan. The better spreader. Talk to your Elanco distributor soon. Or write:

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Proven Balan®. The better spreader for crabgrass control.

Get in 18 holes in the time it took you to do 9.

If your greens aerator is taking its time instead of making time, Toro has great news for you.

Now you can aerate your greens faster than ever before. Powered by a 16 hp engine—twice the horsepower of the leading competitor—Toro's new Greens Aerator can aerate up to 13,000 square feet per hour. That's almost double the territory the other machine can cover!

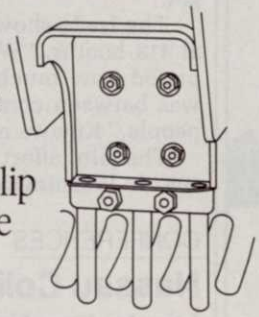
Greater forward speed.

Toro outdistances the competition with a faster coring ground speed and a greater coring width. But that's only the beginning. Toro is also way out in front with these performance and durability features:

Greens Aerator

Better penetration.

Heavy-duty construction gives you a deep, 3″ coring depth and more uniform penetration of the tines. Toro's design also assures clean removal of the core without damaging the lip of the core hole or the playing surface.



Easy operation.

Electric starting gets you moving fast. Large floatation tires glide easily over the turf and make the aerator easier to control. And a reverse gear—another Toro exclusive—gives you added maneuverability.

Maintenance is easy.

Tines can be changed in less than five minutes with an ordinary socket wrench. And with Toro's unique modular design, you can remove the coring head within minutes.

If you'd like to speed up your game, take a look at the revolutionary new Toro Greens Aerator. Just contact your local Toro distributor or write to: The Toro Company, Commercial Marketing/AA, 8111 Lyndale Avenue South, Minneapolis, MN 55420.

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LEGISLATION *from page 14*

"As we see Proposition 65 right now, we don't anticipate it affecting us," he says.

However, the final list of chemicals had not been released at presstime.

"It's going to wind up in court before anything happens," says Sharon McGuire, executive director of the California Landscape Contractors Association. She said her organization is investigating its legal options.

The initiative was sponsored by a coalition including the Sierra Club and the National Resources Defense Council.

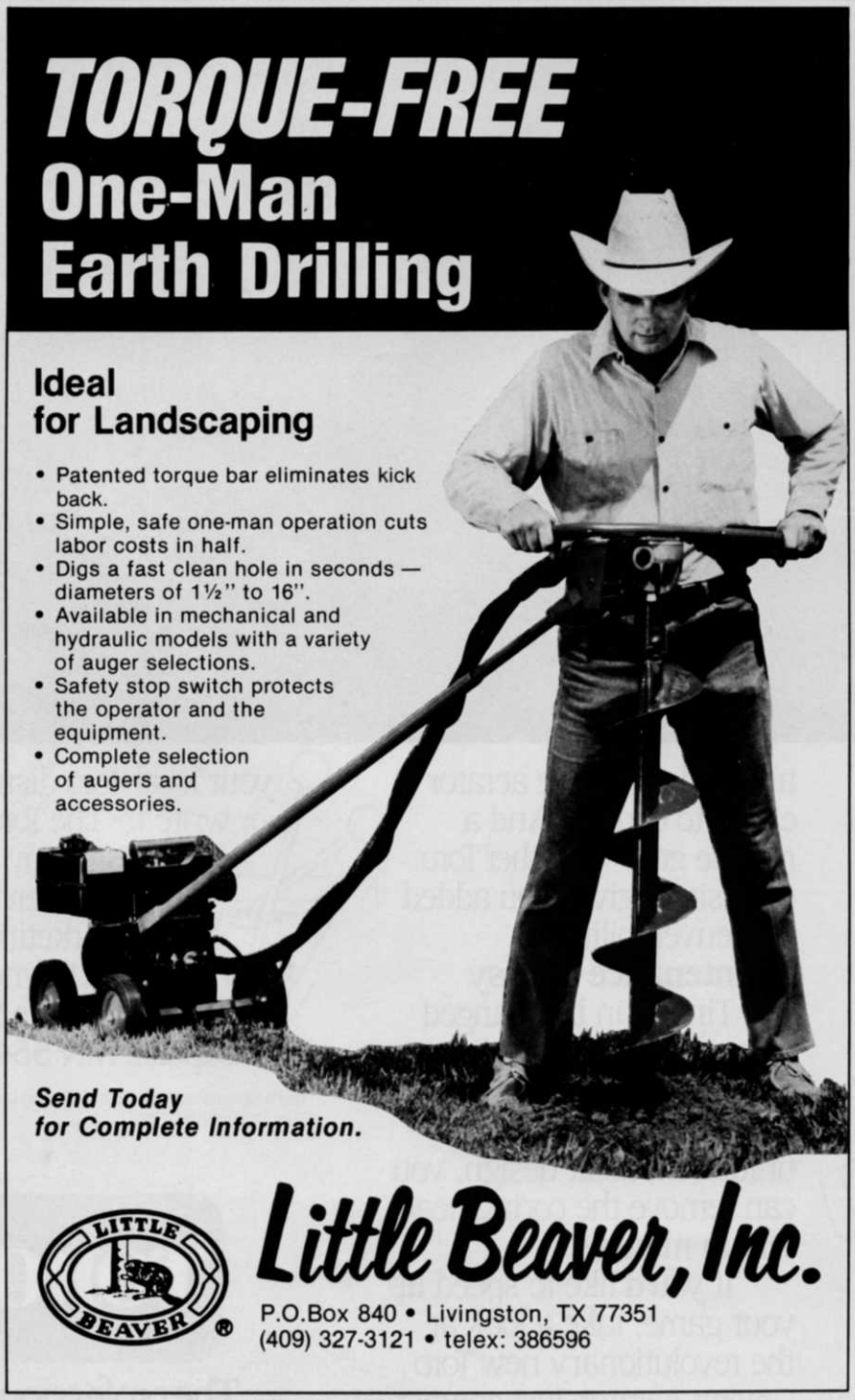
PESTICIDES

Label expected for Acclaim! herbicide

The Environmental Protection Agency will approve a label for Acclaim!, a non-phenoxy, post-emergence herbicide, for use on grassy weeds early this year. Active ingredient in the Hoechst-Roussel product is fenoxaprop-ethyl.

Carole Gray of the EPA's office of pesticide programs said use will probably be approved soon for sod farms, rights-of-way and commercial and residential turf.

Acclaim! is for control of smooth crabgrass, hairy crabgrass, barnyardgrass, foxtail species, Panicum species, Johnsongrass, goosegrass and silver crabgrass.



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ASSOCIATIONS

Green Team event a successful venture

The "Green Team" conference and trade show, the first joint venture by the Associated Landscape Contractors of America's Landscape Management Division and the Professional Grounds Management Society, drew more than 800 attendees to Milwaukee's Marc Plaza Hotel.

Jeff Bourne

"The combination, I hope, will set the tone for the whole green industry," notes Jeffrey A. Bourne, new president of the PGMS. "It was very positive. We have to think in terms of industry-wide benefit. "There's a coming of age going on in our industry," he says. "We have to promote what all the associations are about in terms of benefits. We have to get people into organizations that give them a sense of professional work."

Show chairperson Ron Kujawa of KEI Enterprises is also complimentary.

"For our first attempt, it was outstanding," he says. "We had overflow attendance at almost all the sessions. They wanted more of everything they got."

The trade show had 89 exhibitors at 118 booths. "We were really surprised how much interaction there was between contractors and PGMS people," Kujawa notes.

The joint effort will be repeated in 1987 in Washington, D.C.

CONFERENCES

Nassau Coliseum hosts landscapers

Nassau Veterans Memorial Coliseum is the site of this year's Professional Turf and Plant Conference on Wednesday, March 11.

Some of the speakers are Dr. David Nielsen on IPM, cooperative extension agent Maria Cinque, Dr. Marty Petrovic on groundwater and Dr. Henry Indyk on turf varieties.

The annual event is co-sponsored by the Nassau-Suffolk Landscape Gardeners Association and Cornell's Cooperative Extension of Nassau and Suffolk Counties. For more information, write 59 Orinoco Dr., Brightwaters, NY 11719, or call (516) 665-2250.

GOLF

Supers needed for tourneys

The Musser International Turfgrass Foundation is looking for superintendents willing to host fund-raising golf tournaments. Proceeds from the events go toward turf research, including research on safer athletic fields.

Jon Scott, superintendent at Grand Traverse Resort Village in Michigan, held his second tournament for MITF's safer sports turf campaign last September. The tournament raised more than $5,000 for the foundation.

"We are proud to be working with Dr. Fred Grau of the Musser Foundation in helping to promote safer sports turf," Scott says. "We have exceeded our expectations on the popularity of the event. One thing is for sure, the third annual tournament is already in the planning stages."

Frank Dobie, superintendent at the Sharon Country Club in Sharon, Ohio, pioneered the Musser tournaments 15 years ago.

Money is raised by either a participant's entry fees or a sponsor's donation. Sponsors receive a benefit by having their names posted on a green.

In 1985, the Musser tournaments raised $17,000. The money is deposited into an investment fund, and the interest is returned to states for promoting safer athletic turf.

Grants have gone to graduate students at Ohio State, Cornell, Penn State and the University of Maryland.

Set-up of the tournaments differ from state to state. In Oregon, a different club hosts a tournament each year. Other states keep it at the same club regularly.

Oregon, Ohio, Maryland, Michigan, Minnesota and Canada currently host tournaments.

continued on page 22

The team of (from left) Wally Stedding, Steve Potter, Wally Whetzell and Bob Stiffler are shown with (seated) Dr. Fred Grau and the Grau Trophy after winning the eighth annual Musser tournament at Manor Country Club, Rockville, Md. The tournament is sponsored by the Mid-Atlantic Association of Golf Course Superintendents and the Maryland Turfgrass Council.

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"My goal is one in every state," says Grau, MITF president. "As our investment fund rises, we will have more interest income for grants and for educational work in safer sports turf through the National Sports Turf Council."

Anyone interested in hosting a tournament in 1987, contact: Dr. Fred Grau, Musser International Turfgrass Foundation, P.O. Box AA, College Park, MD 20740; (301) 864-0090.

PESTICIDES

Substitutes for 2,4-D cited by weed manager

The herbicide 2,4-D has been under increasing fire recently for possibly being a causal agent of cancer. More landscape managers are wondering if there are alternatives.

Leon Jones: alternatives to 2,4-D

Leon Jones of the Tennessee Department of Transportation has some possible substitutes.

Jones, who spoke at the annual meeting of the National Roadside Vegetation Management Association, says that bromoxynil, buctril and brominal are good substitutes. Jones uses one pint of bromoxynil and 4 oz. of Arsenal, or one pint of bromoxynil and 4 oz. of Fusilade or one pint of surfactant per 100 gallons of water.

Jones has had good results spraying the bromoxynil mixtures on bermudagrass. However, he has found that the Arsenal mixture also kills fescue. Bromoxynil in combination with Fusilade does not prove fatal to fescue, he says.

PESTICIDES

Poast is labelled for centipedegrass

Federal regulators have added the control of three additional grasses to the centipedegrass label for Poast herbicide, a selective, broad spectrum post-emergence grass killer from BASF Corp. Poast's label now also allows use on seedling centipedegrass.

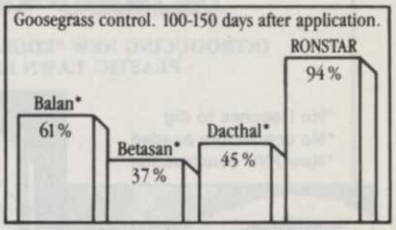
Under the new labeling, bahiagrass now can be controlled in centipedegrass with two applications, according to Dr. Reid Evans, a BASF agronomist who has conducted much of the research on

With Chipco® Ronstar® G and new Chipco Ronstar WP, problem weeds never see the light of day.

Golf course superintendents have made Chipco® Ronstar® herbicide the product of choice for pre-emergence weed control. And rightly so.

Just one application of Chipco Ronstar provides season-long control of 25 tough broadleaf and grassy weeds. Without the root pruning or leaching you get with other turf herbicides.

Plus, Chipco Ronstar still ranks as the Number 1 way to control stubborn crabgrass and goosegrass. Test results prove it.



Summary of 9 years of testing conducted by University Experiment Station and Rhone-Poulenc personnel.

And now, Chipco offers you the choice of easy-to-spread Chipco Ronstar G granules or easy-to-spray Chipco Ronstar WP wettable powder.

So start the season with Chipco Ronstar G or new Chipco Ronstar WP—the best way to keep weeds out of sight and out of mind.

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*Dacthal is a registered trademark of SDS Biotech.

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Poast for centipedegrass.

Besides improving the appearance of a centipedegrass lawn by removing annual grasses, Evans adds, Poast reduces the number of necessary mowings, saving on the total maintenance cost. The herbicide will not harm ornamentals, trees or shrubs growing near lawns, Evans says.

The first application will burn down the bahiagrass and suppress seedhead production for 40 days, he says. Due to the plant's extensive rhizome system, however, weak regrowth will occur. A second application should be made soon after regrowth appears.

A rate of 1/2 fluid ounce of Poast and 3/4 fluid ounce of oil concentrate per 1,000 square feet is recommended.

"(Extension of the label to seedling centipedegrass) should be of interest to centipede sod producers who previously had to rely on pre-emergence herbicides for annual grass control," Evans says. "If a late-season frost occurs, the interaction of cold weather with pre-emergence herbicides can damage centipedegrass seedlings. With Poast, you can delay treatment until any danger of killing frost has passed without sacrificing control."

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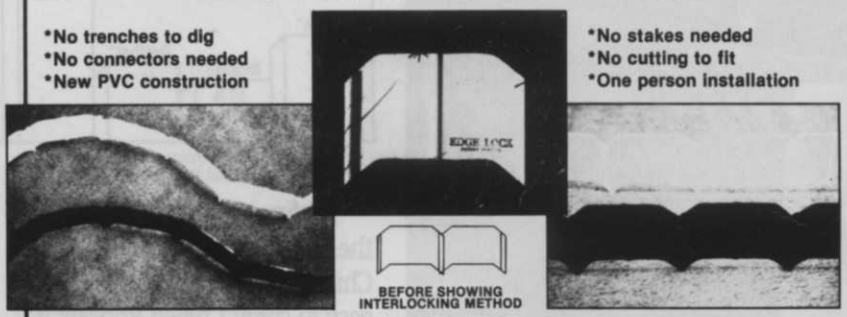

The new "Edge Lock™" interlocking lawn edging system, is unlike any lawn edging you've ever used before. We've eliminated the problems associated with installing those "other" edgings. For example, no more long strips to fumble with. Each "Edge Lock™" section is only 6½" wide x 4¾" tall, and, each one locks inside the other, giving you the freedom to create any length you desire. And once it's locked in, it won't pull apart. Not to mention that any number of feet, or any configuration, can be easily installed by one person! There are no clumsy stakes to struggle with, and no time consuming trenches to dig, Edge Lock™ is self trenching and self supporting too! And since landscaping isn't just "straight lines", Edge Lock™ edging goes around corners without a fight. You can form a complete 18" circle without bending or forcing because each Edge Lock™ section swivels inside the other so it won't hamper your creativity. A 20' section of interlocking pieces comes in a small box 10½" x 7" x 5¼" that weighs 6 lbs., making it possible to transport thousands of feet in a small pickup truck! Edge Lock™ doesn't look like those "other" edgings either, it has a distinctive new beveled appearance, in fact it's so attractive when installed, you'll want to incorporate it as an integral part of your overall design! Want more? How about competitive pricing, colors like black, ivory and green, taller pieces for softer soil, & high impact plastic construction. But then we could go on and on about the benefits of our new edging. If you would like to know more about Edge Lock™ the revolutionary new interlocking lawn edging system, call or write us for more information, and look for more innovations from the company that has been engineering quality products for over 35 years. (Patent pending).

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PESTICIDES

Andersons announces 2,4-D-less herbicide

Amidst the controversy over the safety of 2,4-D herbicide, The Andersons has introduced a herbicide for broadleaf weed control which does not contain 2,4-D.

Hybred Cide Break-Thru is designed to be used most effectively in conjunction with other herbicides, though it can be used alone on easy-to-kill weeds such as black medic, chickweed, clovers, cudweed and dandelions.

The Andersons made the announcement at November's Professional Lawn Care Association of America convention and trade show.

"We've been working on the product for eight years," says Joe DeLuca of The Andersons. "(The convention) was, we felt, an appropriate time to introduce it."

Response to the new herbicide was overwhelming, DeLuca says. Orders have been pouring in, with some lawn care companies planning to switch entirely to the non-phenoxy Break-Thru, while others will give it a trial run this year.

The company is expecting a large sales increase from the chemical division as a result, though DeLuca says it is too early to speculate on how much.

Dr. Ray Freeborg of Purdue University says, "The three-way combination of Break-Thru plus clorpyralid from Dow plus triclopyr appears to be the best non-phenoxy herbicide combination available."

Cost of the product, which, according to DeLuca, is the only non-phenoxy on the market that kills dandelions, will vary with quantity bought, and how it is purchased, either direct or through a distributor.

TURF

Tall fescues win shade tolerance test

Researchers have tried to study turf shade tolerance in controlled laboratory situations, but it can't be done accurately, says Dr. Paul Henderlong of Ohio State University.

"You cannot duplicate the variation in light intensity." Henderlong explained at this year's Ohio Turfgrass Research Field Day. "One minute it's under shadows, the next, there's a burst of light. That burst is more significant than constant light."

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Ohio State University's natural shade study results—1986

Cultivars	Turf Density				Turf Quality
	23 April	26 June	15 July	13 August	13 August
Rebel tall Fescue	8.0	7.7	7.7	6.7	7.7
Falcon tall fescue	8.3	8.0	8.0	7.3	7.3
Olympic tall fescue	8.0	8.3	8.0	7.3	7.7
Pennlawn red fescue	6.7	6.0	6.7	6.0	4.3
Sabre rough bluegrass	8.0	6.0	7.0	4.7	3.0
Bristo Ky. bluegrass	8.0	8.0	7.7	6.7	7.0
Glade Ky. bluegrass	6.3	7.3	7.3	6.7	7.3
Baron Ky. bluegrass	5.7	7.7	7.0	6.7	7.0
Touchdown Ky. bluegrass	6.7	6.7	7.0	7.0	5.7
VA-70-139 Ky. bluegrass	7.3	8.0	7.7	7.0	7.3

Rating scale 1-9, with 9 = best. Average of three replications.

Henderlong implemented a study of turf varieties under naturally shaded conditions in 1983. The study has shown tall fescues to remain the healthiest under shade.

The plots have been maintained at a low fertility and a 2-inch mowing height, with no special treatments. For overall turf quality, Rebel and Olympic tall fescue received a 7.7 rating on a 0-9 scale (9 is highest). Falcon tall fescue, Glade Kentucky bluegrass, and VA-70-139 bluegrass were rated 7.3.

Sabre rough bluegrass and Pennlawn red fescue received the lowest ratings and had considerable fusarium problems.

Despite close ratings among some varieties of bluegrass and tall fescue, the fescues developed no disease problems, making them the best choice for shaded conditions.

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WT&T's annual look at the Top 50 Landscape Companies.

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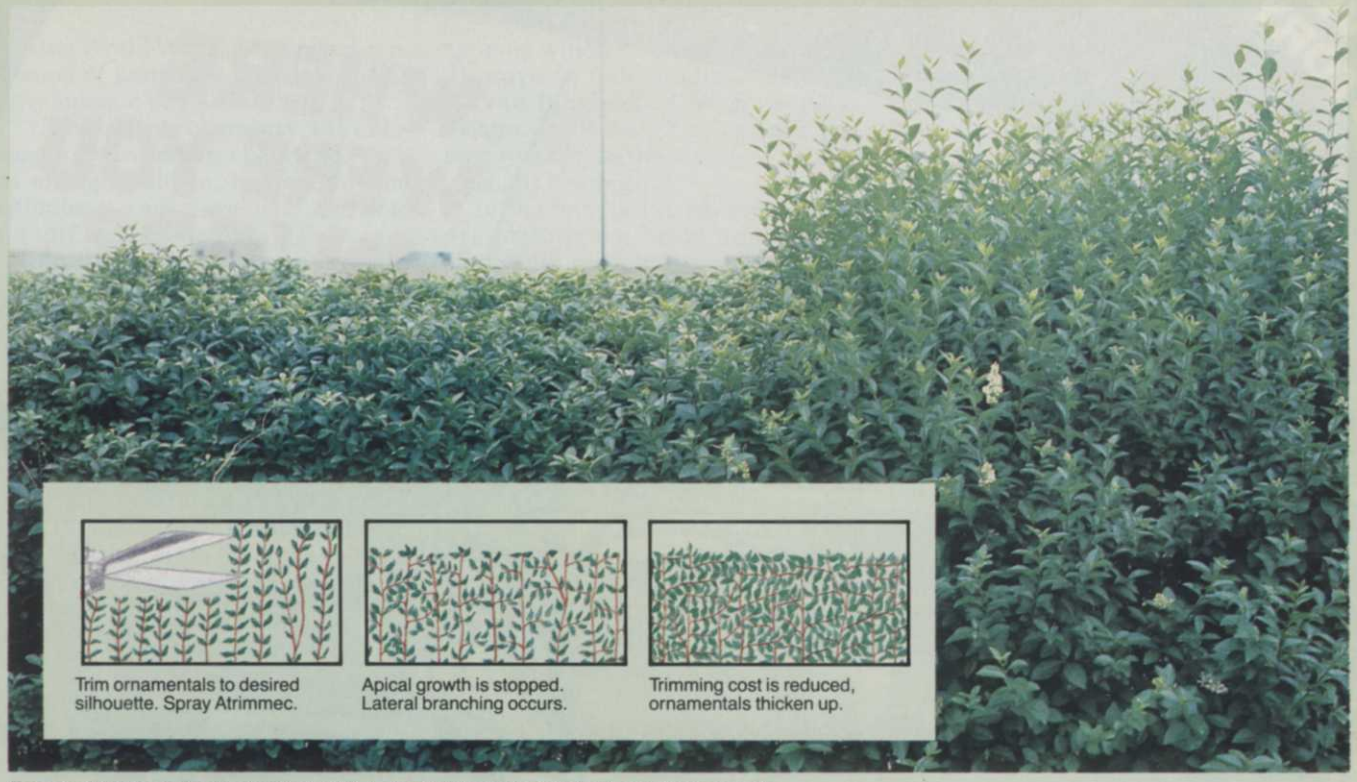

Featured photo is hedge in Nutley, N.J. treated May 8 and photographed July 15.

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After the spring flush of growth, trim hedges, shrubs, ground cover, etc., to the silhouette you want. Wait for the new shoots to grow about 2 inches, and then apply Atrimmec according to label directions.

Atrimmec will block the plant hormones which stimulate apical growth, and the plant energy will be redirected toward lateral branching. The ornamentals will not only retain the silhouette to which you trimmed them, but new lateral branching will cause them to thicken-up and become more attractive.

Atrimmec is also effective in suppressing unwanted flowering and fruit set on many ornamentals. It's also efficient for chemically pinching azaleas, fuchias, kalanchoe, crepe myrtle, shrimp plant, English ivy and other potted or hanging plants.

Do you have questions about Plant Growth Regulators?

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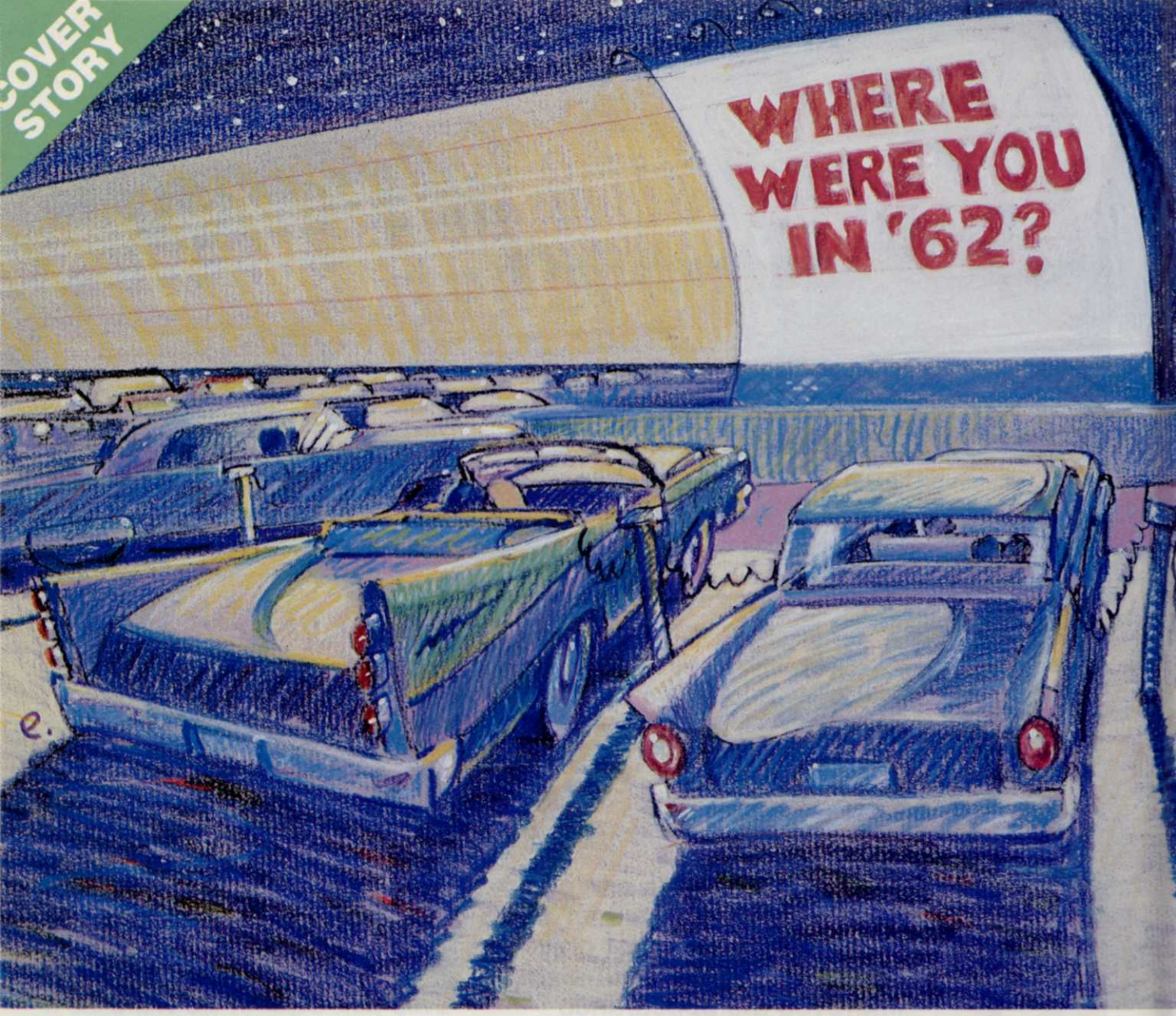
679-1286

COVER STORY

WHERE WERE YOU IN '62?



WEEDS TREES & TURF turns 25 this year. To celebrate the quarter-century mark we take a look back and a look toward the next 25 years in the turf industry. This month, the subject is chemicals.

by Heide Aungst, associate editor

It's 1962...Dacthal and Befasan are used for crabgrass control...Merion Kentucky bluegrass is one of the few refined turf varieties...Toro starts its Irrigation Division.

JFK is president...the Four Seasons are at the top of the music charts...Rachel Carson's *Silent Spring* is published...

Dr. Fred Grau is a consultant to the Hercules Co....Dr. Jim Watson has been with Toro for a decade...Herb Day is in Nebraska doing research and technical service for Stauffer Chemical Co...

Hair is getting longer...pant legs wider...music louder...

And, amidst it all, WEEDS TREES & TURF publishes its first issue.

Well, actually, back then it was WEEDS AND TURF (TREES was added in '64), and it started as a section in *Pest Control* magazine.

"Weeds," as it's known around the office, has gone through many changes during the past 25 years, but the industry has experienced even more. We just try to keep up.

Over the next several months WEEDS TREES & TURF will look at the history of the green industry through the eyes of three veterans—Grau, Watson and Day. Part I looks at chemicals.

Chemically dependent

Herb Day retired from Stauffer Chemical Co. a year ago, after 30 years of service. He currently works as a consultant in agricultural chemicals.

Chemicals for the turf industry, according to Day, are just entering their fourth generation.

The first generation started before World War II with the use of inorganic chemicals, such as lead arsenate, nicotine sulfate and copper sulfate.

During World War II, the second generation of pesticides started with the development of 2,4-D and DDT.

Using organic chemistry, the chloronate hydrocarbon chemicals, such as aldrin, dieldrin, heptachlor and chlordane were developed and sold for turf and other crops.

Bandane became popular for crabgrass control in the '50s. Its manufacturer, Velsicol, became No. 1 in the industry.

During this period, other organic pesticides came on the market, including captan, malathion and Sevin.

2,4-D, a broadleaf post-emergence herbicide, was used in mixtures during this time. Primarily it was mixed with mecoprop and silvex. The latter, along with 2,4,5-T, was banned in 1976. (Dioxin forms in the synthesis process.)

In the early '60s, Diamond Shamrock came out with Dacthal (DCPA). Stauffer followed shortly with Betasan.

For post-emergent weed control, Trimec, a combination of 2,4-D, mecoprop and dicamba, hit the market.

"Trimec was marketed as a patented material because of a synergism claimed which no one could prove or disprove in field studies," says Dr. Wayne Bingham of Virginia Polytechnic Institute. "The patent's just now run out, so there may be similar products coming out."

In the late '60s Balan entered the pre-emergence herbicide market along with organic chemicals Tupersan, dicamba and a number of turf fungicides.

In 1962, Rachel Carson published the book *The Silent Spring*, which brought the use of pesticides into the public eye. "Everybody in the industry dates things before and after Rachel Carson," says Day.

The book awakened a somber public and led to the EPA's formation. One of the agency's first actions was to ban DDT in 1971.

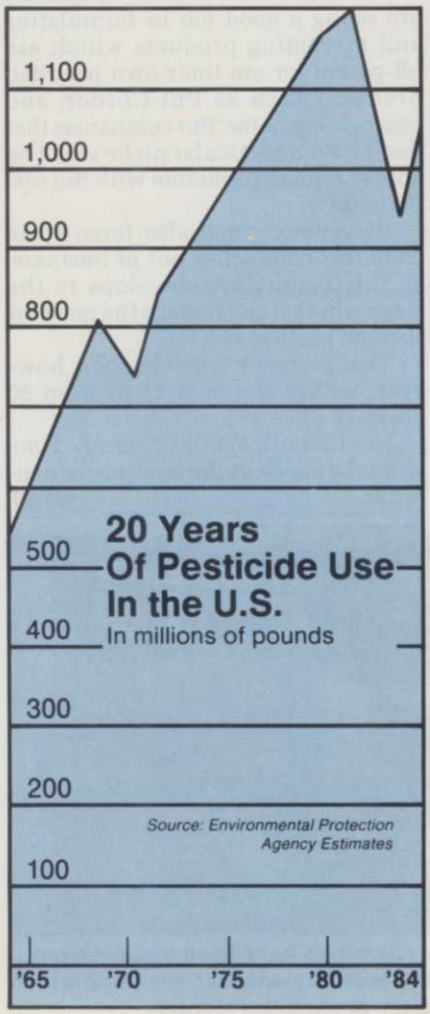
Geigy, known today as Ciba-Geigy, was the first manufacturer of DDT. Stauffer stopped manufacturing it in 1972.

The ban led the chemical industry to frantically search for a substitute. Companies turned to phosphate products such as malathion, diazinon and Dursban, and carbamates like Sevin. Chlordane was still used, but has since been banned for uses other than as a termiticide.

Other chemicals also fell by the wayside during this time, including Paris Green, an insecticide, and captan, a fungicide.

The herbicide Ronstar came to the market in the early '70s and, according to Bingham, "was a step forward for golf course people since nothing had worked well on goosegrass on fairways before this," he says. Later Ronstar was cleared for mixture with bensulide to treat golf greens.

Herb Day



Trade shows haven't changed much over the years. In this 1955 photo, AquaGro's first president Larry Fletcher and Jack Boley, director of marketing, sell their product.

Time of transition

A transition among post-emergents occurred in the late '70s. Union Carbide came out with Weedone DPC after the banning of silvex. Dow entered the market with Turflon D, a combination of 2,4-D and triclopyr.

Fertilizers changed dramatically during this time period. The first fertilizers were liquids. Granulars became popular in the late '50s. Early heavy weight fertilizers easily burned turf. Vermiculite became one of the first light-weight granulars.

Sulfur-coated urea became the first slow-release nitrogen source. Nitroform overtook the market as the first soluble fertilizer. "I traveled throughout the country drinking Nitroform Powder Blue cocktails," Grau recalls. "It shocked them at first, but it illustrated the fact that it's safe and breaks down. Of course, I'd have a little whiskey in it sometimes."

Pendimethalin entered the herbicide market in the early '80s (Lesco markets a spray, Scott's a granular fertilizer). "It's a cheaper compound and can be used on a bigger scale," Bingham explains.

The third generation

The third generation began about this time with the use of biorational products, which use bacteria and viruses to fight disease and insects. Growth regulators for plants and insects fit into this category.

Growth regulators, however, are not all ready for the large markets because of costs and regulatory approvals. Some, such as BT (bacillus thuringiensis, trade named Thuricide and Dipel), have been in limited markets for more than 20 years and are just now gaining in market shares.

Another product in this generation is American Hoechst's Acclaim! post-emergence herbicide. (The product should be on the market this year, pending labeling). Acclaim! is not an arsenical product like other post-emergence herbicides for annual grasses. It will control annual and perennial grassy weeds in cool-season turf areas at the young stage of the weed's growth. It won't work on old well-tillered grasses.

Early issues of WEEDS AND TURF concentrated on chemical spraying of turf, ornamentals and trees.

Dow is experimenting with a product similar to Acclaim!, called Tridiphane, which is also a post-emergent. The product will be marketed only if it can economically compete with Acclaim!.

No alternatives?

There's also talk of taking old standby products like 2,4-D from the market because they contain phenoxy compounds. "If they take out all phenoxy compounds, it's setting us way back to control weeds," Bingham says. "We don't have anything that will be a good substitute."

One partial alternative, Bingham says, is the Andersons' Break-Thru, a chloroflurenol that works best mixed with dicamba or triclopyr.

Today, biogenetic engineering—changing the actual gene composition of the plant—is where the industry is headed. Day calls this the fourth generation. It is still in its infancy.

Biogenetic research is scarce at the universities, but it's rampant among chemical companies.

"What if Monsanto developed a Kentucky bluegrass that was resistant to Roundup? It could put other chemical companies out of business," says Dr. Bill Torello, who is doing biogenetic research at the University of Massachussetts.

"Biogenetics are a direct result of industry developing new technology in the control of pests and the growing of food, fibre and turf," says Day.

He adds that the costs of developing and maintaining pesticides in the market (including liability insurance) will have a big impact in several years on which companies stay in the business.

Day predicts that some of the current big pesticide producers (like Ciba-Geigy, Monsanto, Dow, Stauffer and Mobay) will stick.

Others will get out when their costs outweigh profits.

"A number of smaller companies are doing a good job in formulating and marketing products which are off-patent (or are their own patented product) such as PBI-Gordon and Lesco," Day notes. But companies that don't have a particular niche won't be able to remain profitable with the cost of liability.

Biogenetics may also force some chemical companies out of business, as this technology develops to the stage where it can replace the need for specific pesticides.

That probably won't happen, however, within the next 25 or even 50 years.

Next month WEEDS TREES & TURF will take a look at the equipment evolution. **WT&T**

Spraying remains a primary means for application of chemicals.

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'I NEED A DRINK!'

Many superintendents could be uttering that phrase in the not-too-distant future. But it's not water they'll be drinking.

Water continues to create problems in the golf course market, problems that could drive some superintendents to drink. But they won't be drinking water; that will be in too short a supply for a large portion of the country.

Some areas are facing the problem now. States on the eastern seaboard faced shortages this past summer, and New Jersey actually banned some water use. But the Southwest is where most of the trouble will hit.

Bob Randquist, superintendent at Southern Hills Country Club in Tulsa, Okla., says his course has a steady water supply. But, he adds, a number of other courses in the area could be without one soon. "Water is at a premium right now."

Like Randquist, Tom Athey does not face a problem at Fremont Country Club in Omaha, Neb. He is hooked into the municipal water system, where his water bills and supply have remained stable. But courses outside the area relying on their own wells or aquifers will soon be left high and dry.

Something, Randquist notes, must be done. He believes most clubs are willing to spend the money to research alternative sources of water, such as effluent or recycled water. Nothing has yet been organized, though the industry has been discussing the problem for some time (see WEEDS TREES & TURF, Jan. 1986, p. 82).

Dennis Orsborn, a golf community developer, says water management programs will be a big part of the conservation effort in the future. His company, Sunrise of Palm Springs, has been installing computerized irrigation systems that use pumps with a variable frequency drive motor. The system is more efficient, providing the exact amount of water and pressure desired.

He says of the situation in the Southwest: "It's going to get worse, not better." Orsborn adds that parts of Arizona and Southern California are required to use effluent water.

Randquist notes there is potential for widespread use of effluent, though "we need a better understanding of its content."

Dick Herr, superintendent of Jupiter Hills Country Club in Jupiter, Fla., has been using recycled water for some time with no problems. But, he says, his area has only a three- to four-year supply. For him, recycled water is only a stop-gap solution.

Randquist understands this problem and is calling for research to develop longer-term effluent supplies, as well as alternative sources. Some of these alternatives include hybrid turf grasses more resistant to drought conditions.

Jon Scott, golf and grounds director at Grand Traverse Resort in Michigan, expects some offerings soon—possibly a variety of bentgrass. He also notes that water management programs can take some of the heat out of the drought.

The problem is convincing golfers that the browner looking turf they're playing on is still of high quality, though maybe not as high as previously. "There could be a trade-off in quality," Scott admits.

However, research costs money.

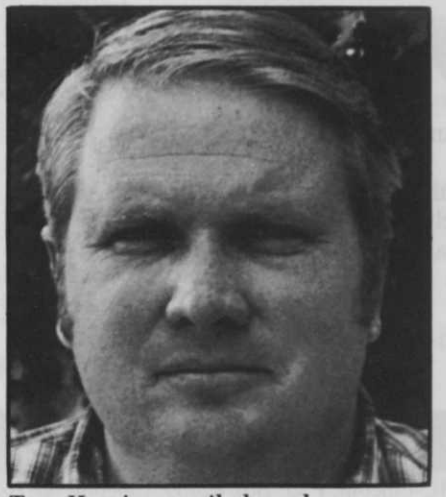
Randquist hopes that a superfund can be created by the GCSAA and the USGA. But he admits that the possibility of help other than advice from courses in the North (where often the problem is too much water) is unlikely. Until the North feels the thirst, he says, the rest of the country should experience only a trickle down effect.

The black death

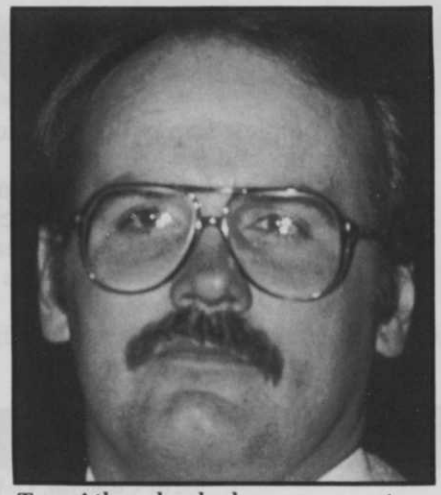
Ironically, this water shortage could save courses from another, potentially more serious problem: anaerobic black layer.

The common denominator in the problem, which is becoming more widespread nationally, is water—too much of it. Black layer has forced Scott to replace a number of greens at the Grand Traverse course.

No cure has yet been discovered. Some stop-gap solutions have been used to control and isolate (but not



Tom Harrison: spikeless shoes



Tom Athey: hooked on muny water

Bob Randquist: calling for research

In 1986, what were your expected expenditures for:

Chemicals, supplies	% sample purchasing	Average per purchaser	Projection to WTT readership
Turfseed	82.3	$2,590	$20.3 million
Sod	31.6	2,010	6.1 million
Dry-applied turf fertilizer	86.1	8,480	69.6 million
Liquid applied turf fertilizer	46.8	1,490	6.7 million
Tree fertilizer	25.3	464	1.1 million
Soil Amendments	38.0	1,430	5.2 million
Adjuvant spreaders	30.4	368	1.1 million
Wetting agents	62.0	554	3.3 million
Pre-emergence herbicides	64.6	3,240	19.9 million
Post-emergence herbicides	69.6	1,770	11.7 million
Aquatic herbicides	39.2	526	2.0 million
Fungicides	83.5	6,850	54.6 million
Insecticides for turf	79.7	2,320	17.6 million
Insecticides for trees/ornamentals	32.9	612	1.9 million
Growth regulators	34.2	293	1.0 million
Equipment			
Golf cars/gas: #owned	49.4	26.1	123,000
expenditures	32.9	$5,730	$18.0 million
Golf cars/electric: #owned	45.6	31.1	135,000
expenditures	21.5	$9,210	$18.9 million
Utility/ATVs: #owned	78.5	4.3	32,000
expenditures	49.4	$2,670	$12.6 million
Sweepers: #owned	41.8	1.2	4,590
expenditures	17.7	$334	$201,000
Irrigation pumps: #owned	89.9	2.4	20,600
expenditures	46.8	$1,990	$8.9 million
Sprinklers: #owned	83.5	361	2.87 million
expenditures	57.0	$1,940	$10.6 million
Electronic irrigation controls: #owned	53.2	20.3	103,000
expenditures	27.8	$1,790	$4.74 million
Walk-behind mowers rotary: #owned	89.9	3.8	32,200
expenditures	54.4	$336	$1.74 million
Walk-behind mowers reel: # owned	58.2	4.3	23,300
expenditures	31.6	$2,170	$6.54 million
Riding mowers rotary: #owned	69.6	1.8	11,700
expenditures	34.2	$2,870	$9.34 million
Riding mowers reel: #owned	81.0	4.3	33,500
expenditures	51.9	$5,890	$29.1 million
Tractor drawn gangs: #owned	82.3	2.4	18,700
expenditures	39.2	$2,840	$10.6 million
Spreaders: #owned	89.9	2.6	22,400
expenditures	29.1	$282	$784,000
Soil aerifiers/corers: #owned	87.3	2.1	7,360
expenditures	46.8	$1,140	$5.1 million
Sprayers: #owned	88.6	1.8	15,600
expenditures	41.8	$354	$1.4 million
Line trimmers: #owned	73.4	2.8	19,300
expenditures	44.3	$171	$721,000
Chain saws: #owned	84.8	2.0	16,300
expenditures	43.0	$215	$881,000
Plant materials	59.5	$2,070	$11.8 million

get rid of) patches of the layer, which has so far been limited to bentgrass greens. Weekly aerification and fertilizing, along with application of hydrogen sulfite, seem to somewhat contain small patches. But a cure is obviously needed before the problem becomes epidemic.

Good and bad

Despite some problems, golf course use is still on the rise, with most private clubs having to put prospective members on a waiting list.

This has its downside. Increased traffic means more work for supers.

Spike marks on greens and tees have been a problem at some courses because of traffic. To aid the greens' recovery, Randquist has been aerifying the greens at Southern Hills more frequently.

Lower cut and slower growth have not helped the recovery process either. Tom Harrison of Maple Bluffs Country Club in Madison, Wis., has been trying to convince his members that a slightly higher cut, slower green, would be beneficial to the course. Unfortunately, he says, golfers prefer faster greens.

Harrison hopes that the spikeless shoe market will pick up. He has been encouraging club members to purchase the less-damaging shoe, and says of the spiked variety, "I'll be tickled the day they're gone."

Jon Scott believes that many courses being built now and in the future will take on a more practical shape: adequate-sized greens, tees and fairways, but not excessive. "I see a more manageable course, less extravagant," he says. He adds, however, that there will always be a niche for the extravagant course.

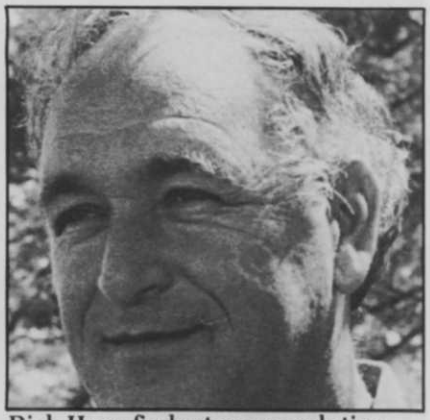
Dennis Orsborn concurs. "Our heyday is over. We must become as well educated as we can, and keep up with changing technologies as best we can. This is a business, and we must treat it like a business."

Points of interest

Increased traffic should also provide some good sales for equipment manufacturers, especially of aerifiers. Golf course managers who read WEEDS TREES & TURF reportedly spent more than $5 million on them last year (see chart).

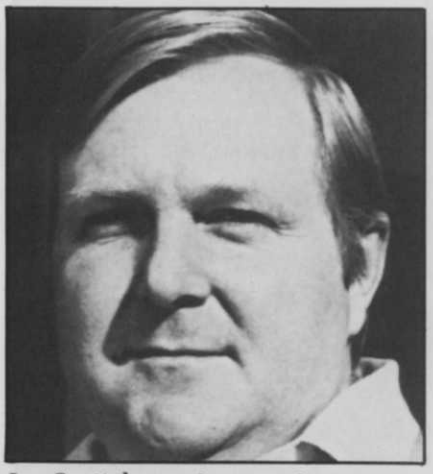
Golf courses also have provided 75 percent of all expenditures on walk-behind reel mowers ($6.5 million worth) and nearly 70 percent of riding reel mowers ($29 million). Golf courses have provided about half of the industry's expenditures on tractor drawn gangs (more than $10 million).

As always, fungicides occupied a good portion of golf course expenditures this year. Superintendents who read WEEDS TREES & TURF spent around $56.4 million on them in 1986. All other readers of WT&T spent $25.2 million. Finally, supers laid out a good amount of cash for plant materials last year, nearly $12 million worth overall. **WT&T**



Dick Herr: finds stop-gap solution

Dennis Osborne: our heydey is over



Jon Scott: less extravagant courses

THE COMEBACK

Three years ago, cows grazed at Castlewoods Country Club in Jackson, Miss. Now the course is among the area's finest and improving quickly.

Three years ago, Castlewoods Country Club resembled a cow pasture instead of a golf course. Today, it's the site of the Mississippi Golf Association four-ball state tournament.

Castlewoods, no longer ridiculed as Jackson's worst golf course, is much nearer the top of that list and continuing its climb. You can thank the new owners for deciding to put up the money needed for nurturing a quality course.

And then there's Stanley Reedy, a soft-spoken, 26-year-old native Mississippian, who has served as superintendent since October, 1983.

He's the guy who took the beater course and shaped it into an effective advertising tool for the surrounding housing development.

No big deal, says Reedy with

Team prevents your weeds with all-season stamina. It's gentle on cool season turf grass, including bluegrass, ryegrass, bentgrass and other fairway grass species. And Team pre-emergence herbicide consistently delivers better control, longer control for your crabgrass and goosegrass.

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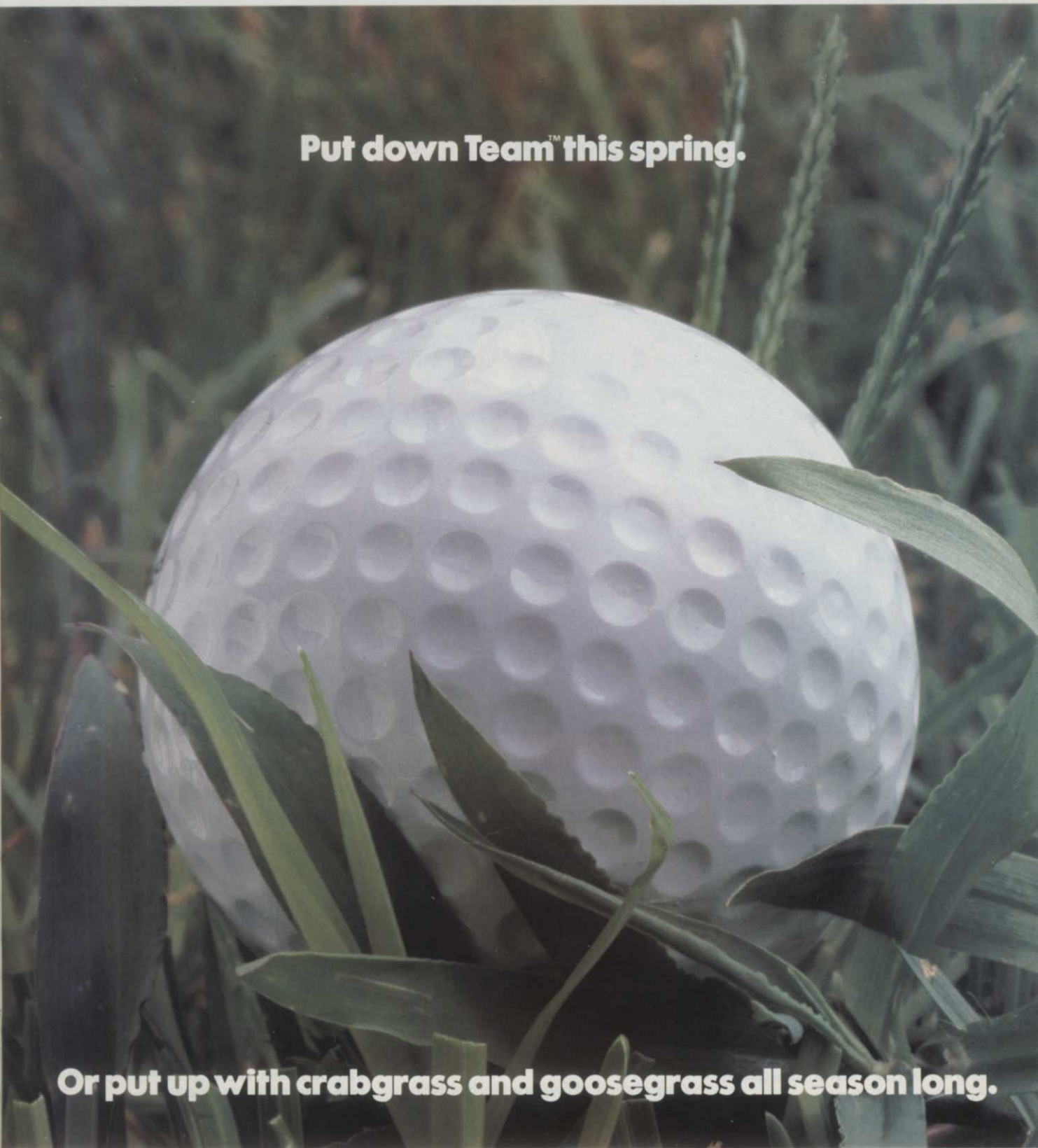

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Unmatched versatility. The G-4x4 tractor is the ideal companion to our tough Hydraulic Ranger.

Highly maneuverable, this durable tractor features four-wheel drive, four-wheel steering, a low center of gravity and wide, hill-hugging stance to hang tough on the tricky slopes others steer clear of. While "true-track" steering and a low seven-PSI ground pressure produce a soft touch on tender turf.

Available in two models: the G-4x4 with an economical 24-hp diesel, or the new G-4x4 PLUS with a brawny 32-hp diesel and power steering, this machine has all the hill-climbing power you could ask for. Plus a whole lot more.

PTO's front and rear, each with a three-point hitch, accommodate a variety of implements. From a rotary or flail mower, to a sweeper, blower, snowblade, snowblower, aerator, seeder and spreader. You'll find the G-4x4 the most versatile tractor on the course, year round.

Backed by the proven reliability of Jacobsen and the industry's most extensive service and support network, it's easy to see why the G-4x4 and the Hydraulic Ranger boldly mow where others fear to tread.

For more information, or to arrange a free demonstration, contact your Jacobsen distributor. Attractive lease and finance plans available.

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typical "aw shucks" modesty. But one senses Reedy is proud of what he's done.

"This place was a goat ranch," says Reedy. Castlewoods didn't really have a superintendent; just people who mowed periodically.

"The clubhouse was a little trailer. When I first interviewed for this job I told them 'no way.' I was coming from a lush place with a $400,000 budget (Belle Terre Country Club, a Pete Dye course in Laplace, a New Orleans suburb). But they promised me they were going to do everything they've done," says Reedy. He's referring to Castlewoods Land Development owners Zack Hederman and Larry Edwards.

"Now I'd match this course against any course in the state," says Reedy. "My crew is doing a great job."

Castlewoods was once called Jackson's worst golf course. Today the course is in tournament condition.

Disaster zone

In 1983, Castlewoods wasn't a pretty place. "I would estimate the turf was 40 percent bermudagrass, 30 percent dirt, and 30 percent weeds," recalls Reedy. "There were open ditches in front of the greens and the sand traps weren't really sand," says Reedy. Drainage was poor and the traps were essentially mud. The No. 18 green was bald.

The club owned one tractor and two greensmowers, one halfway buried in mud. (Reedy and crew unearthed the Jacobsen tractor. It still runs today.)

"The first thing we did was buy equipment," remembers Reedy. Included was a JI Case backhoe, two Ford tractors, two 72-inch Toro mowers, two Toro greensmowers, a sprayer and a Chevy pick-up truck. They also bought a turf vacuum, blower, sand pro and two Cushman truckstors.

"The workers didn't even know how to calibrate a sprayer. I'm not knocking the guys—they did the best they could," says Reedy.

Next came the necessary job of upgrading and, in some cases, installing drainage systems. "We contracted out a bunch of it. Then we installed culverts and catch basins the first fall and winter," says Reedy.

In 1984, Reedy and his reliable crew paid particular attention to upgrading the club's poor fairways.

The crew at Castlewoods built several greens and changed the contour of others. Hole #1 is an example of the successful renovation.

One of the strengths of Team™ is its weeks of control. One application puts an end to crabgrass and goosegrass for up to 20 weeks.

The control's not just longer, it's more effective, too. Research by leading universities shows that Team provides outstanding annual grass control all season long while being gentle to all turf species.

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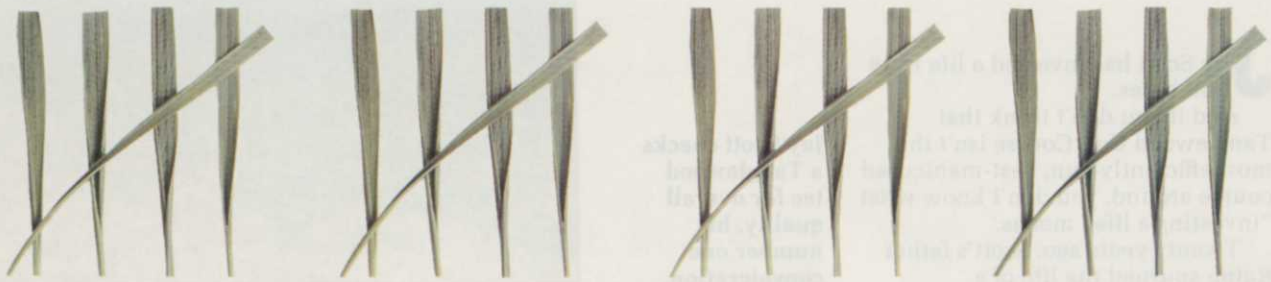

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Reedy row-sprigged Tifway 419 bermuda. The crew also rebuilt a few greens and changed the contour of others.

A focal point

Among the vast changes, none is as dramatic as the picturesque lake that highlights the first hole. Reedy ordered it built immediately for aesthetic purposes.

Other smaller bodies of water have been extended, like the pond to the right of the green on the par 3, 172-yard seventh hole that is perhaps the course's visual highlight.

Reedy has taken an idea from Pete Dye and added some cross-tie work along the pond's bank. He's also added a number of bunkers, upgraded the Toro irrigation system, rebuilt the driving range and started a tree-spading program.

Room for improvement

Reedy readily admits he and his crew have more work ahead. Play has increased tremendously and traffic problems are apparent. Membership has grown by 200 percent in two years thanks to the improvements and resulting population boom in the adjacent Castlewoods development.

Surprisingly, despite the Jackson humidity, Reedy has few disease problems. He is experiencing a war against the pine bark beetle which has taken out a number of the course's pines.

He says the course will be in top condition for the State Amateur championship coming this summer, should Castlewoods be chosen. Right now, the course is in the top two.

Castlewoods' superintendent Stanley Reedy has wanted to work on a golf course since his teen years when friend Pat Sneed told Reedy how rewarding the job is. Reedy later married Sneed's sister, Dot. Sneed is superintendent at Tupelo (Miss.) CC.

That makes two of the top four state tournaments held at Castlewoods.

Come to think of it, Stan Reedy has a right to be proud.

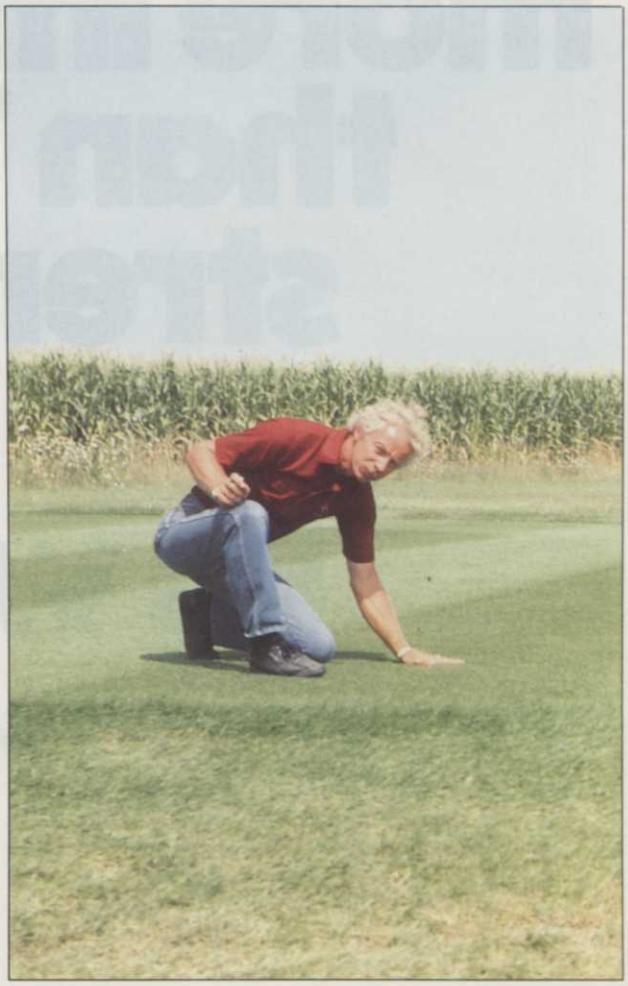
MAKING A LIVING

Owners of public golf courses, like Jay Scott of Tanglewood, depend on greens fees for a livelihood. They might make the best superintendents of all.

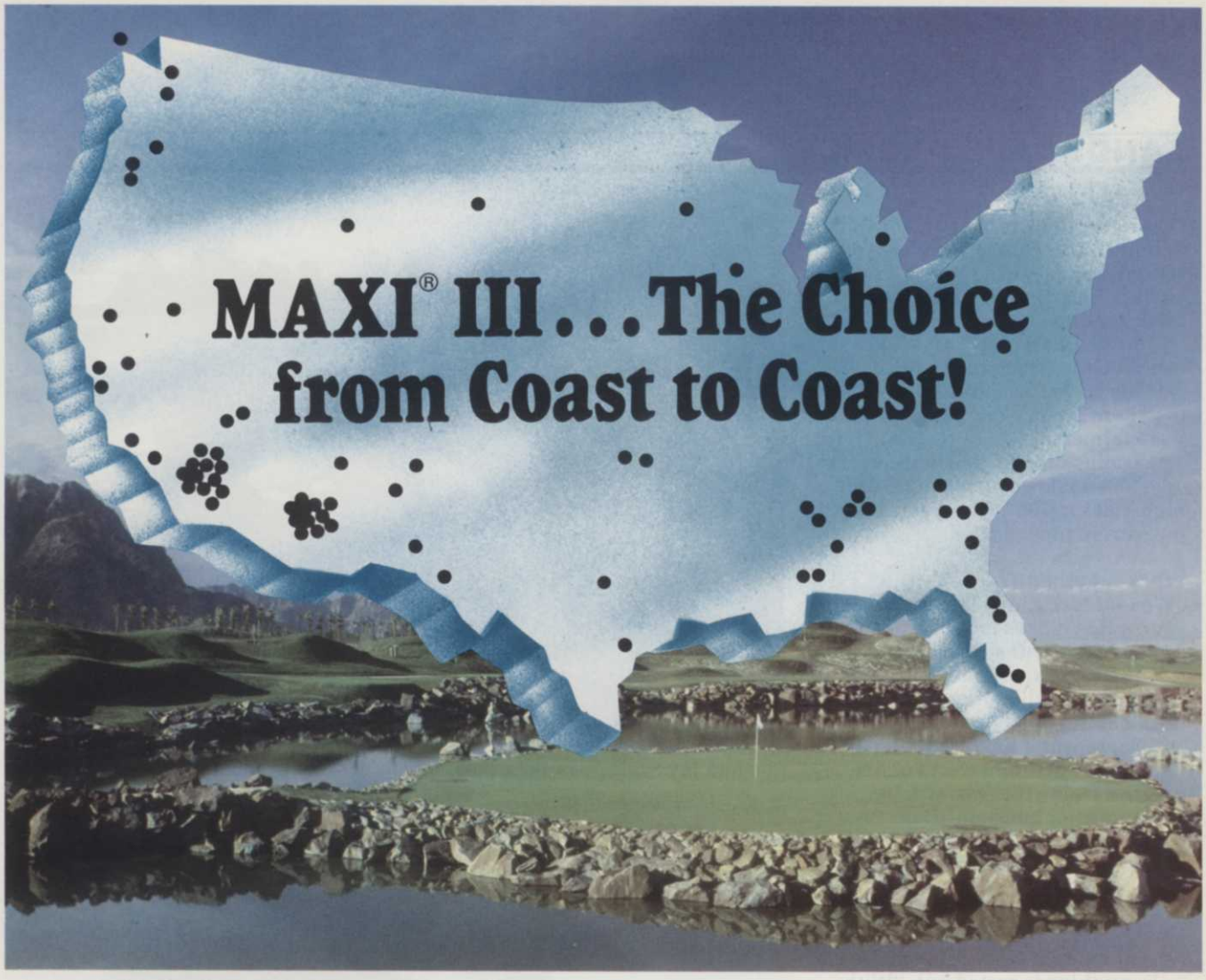
Jay Scott has invested a life in 18 golf holes.

And if you don't think that Tanglewood Golf Course isn't the most efficiently-run, best-manicured course around, you don't know what "investing a life" means.

Twenty years ago, Scott's father Ralph spurned the life of a



Jay Scott checks a Tanglewood tee for overall quality, his number one consideration.



Stadium Course, PGA West

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Delaware, Ohio, farmer and decided to build a golf course. Ralph is now retired. Son Jay, daughter-in-law Sue and son Bob run the course. It is their livelihood.

"It was Dad's idea," says Jay, a central Ohio twang in his voice. "It was his way of keeping the family together. Twenty-one years ago, we were farmers."

Farming didn't agree with Jay, for one. So Tanglewood opened with nine holes in 1967. Two years later, the second nine opened.

What's pythium?

"We told Jack Kidwell to build us a course that makes money," Scott remembers. "Our schooling was strictly from experience. Turfwise, it was a phone call to Jack every day of the week.

"There was a time we didn't know what pythium was. For five years, learning turf was strictly question after question after question. Of course, there's no way you could do that today without a professional."

His family has prospered because Jay treats golf course superintendent-ing as a business.

Everything is costed out. "With the greens fees from the 280 people that go through here on a typical day, I can control weeds the whole year," he observes.

Selling good turf

Tanglewood is 20 miles from Columbus, Jack Nicklaus and Muirfield. That means the competition to attract golfers is intense.

"I don't have a scenic course," Jay admits. "If I want golfers, I have to sell good turf. And there are no more excuses left for not having a beautiful course. We've got too many good products at our disposal."

Tanglewood greens are Penncross. Tees are half ryegrass, half bluegrass. Nine fairways are Merion bluegrass, the rest half rye, half blue. All are due to be completely renovated with Roundup non-selective herbicide during the next three years.

"This fall, we're going with 100 percent ryegrass," says Scott. "Prograss herbicide kills everything but rye, it will kill poa annua either pre-emergence or post-emergence, and it will thin bluegrass so much that the rye will take over.

"I'm leaning more to the idea of 100 percent rye being a great salvation. The only problem is red thread, so you just have to plan on four applications of fungicide a year."

Tees and greens are in impeccible shape. "There's no way I can improve on them," Scott says. They are mowed at ½-inch and ⅛-inch, respectively.

Fairways, which are mowed at $^{11}/_{16}$-inch, however, need some improvement. "I only give them half an inch of water a week. But, eventually, I'd like to have them up to the level of the tees and greens. And I'm not afraid to spend any amount of money to do it."

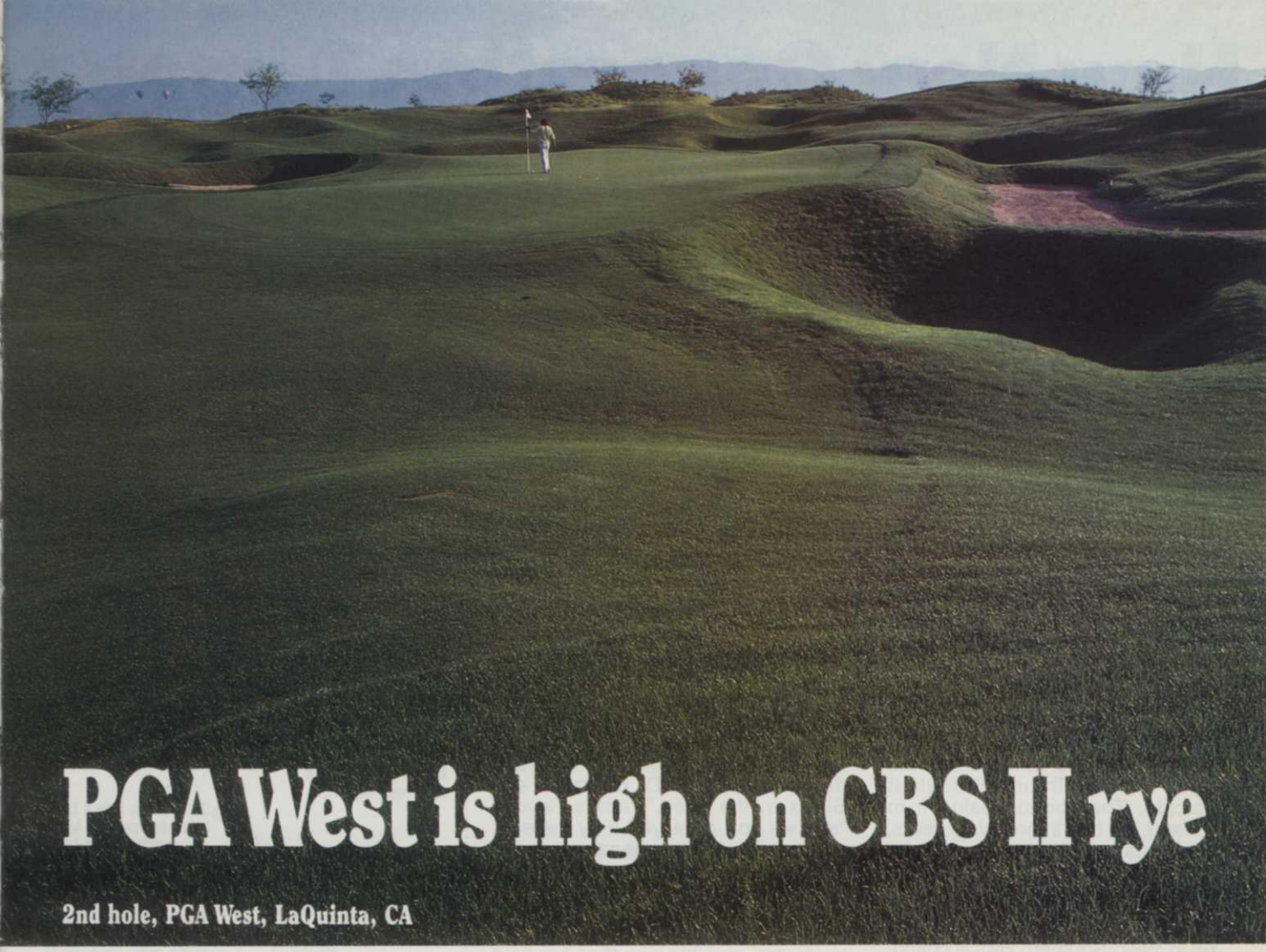
Sue and Jay Scott relax for a moment amid Tanglewood's fleet of golf cars.

A 21-foot, nine-gang tractor mower races between trees.

Tricks of the trade

The course does not have an over-abundance of trees. But none have been planted nearer than 21 feet from another. Why? "Because we use nine-gang, 21-foot mowers, and we can zip between them."

Tanglewood is one of the few



2nd hole, PGA West, LaQuinta, CA

This Pete Dye designed course uses CBS II blend for uncompromising quality in desert overseeding

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CBS II establishes quickly, tolerates temperature extremes, has improved disease resistance and provides a thick, dark-green, finer bladed carpet that mows better than older rye varieties. CBS II is ideal for PGA West's tees, fairways and roughs.

PGA West is a state-of-the art golf course. The people who play here demand perfection. If the difference between CBS II and cut-rate ryes is a matter of pennies, the choice is simple . . . *CBS II* . . . there simply is no better blend at any price!

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How New Generation Trimec® BROADLEAF HERBICIDE Can Help You Capitalize On Your Professionalism

"Every turf professional who has ever been tempted to say, *'If it ain't broke, don't fix it,'* will enjoy the comments of the retired superintendent of Southern Hills, and his present-day protege."

Everett Mealman, *President*
PBI/Gordon Corporation

The prestigious Southern Hills Country Club in Tulsa was the first country club in the world to use the original Classic Trimec Broadleaf Herbicide. They began using it in 1969 and, in the intervening years, the club has continued to maintain its world-class status in the field of immaculately manicured and challenging golf courses.

Yet in 1987, Southern Hills is changing herbicides. How can you account for such a surprise decision in a world where it is so commonplace to say, *If it ain't broke, don't fix it!* . . . It's a matter of professional integrity!

Robert Randquist, the course superintendent, is charged with the responsibility of maintaining weed-free turf. But he must do it within the constraints of two basic parameters. First, he must be environmentally responsible; and secondly, he must be as efficient as possible in deference to the realization that the greens committee understands the value of a dollar.

And these overall considerations have caused Randquist to drop Classic Trimec just as Leslie Snyder, his predecessor, discontinued the weed-control program he was using prior to 1969 when he switched to the original Classic Trimec. "In the early days we kept 2,4-D, dicamba, and Silvex in the shed," recalls Snyder, "and we sort of played it by the seat of our pants. But between these chemicals and keeping a close watch, we managed to keep the course in immaculate condition." (Snyder carried a two handicap in those days, which he insists was the result of his field trips to inspect the turf.)

How Southern Hills Got Started With Trimec

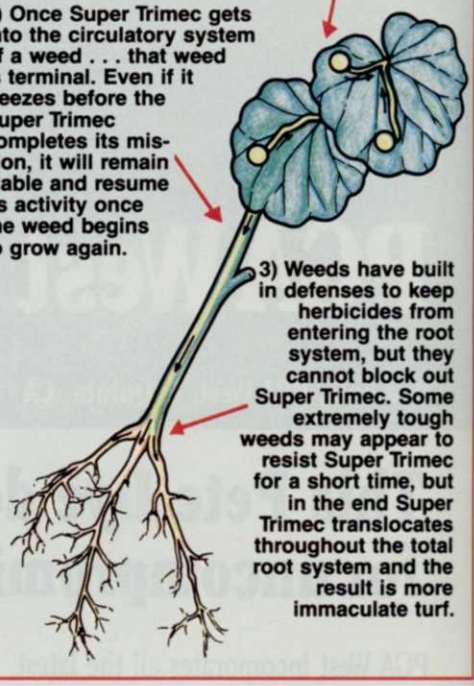
Suffice to say, PBI/Gordon conclusively proved to Snyder that Classic Trimec would deliver immaculate weed-free turf more efficiently than his intuitive green thumb regimen, when you measured the cost of chemical and the labor cost of retreatments.

When Randquist became superintendent of Southern Hills in 1979, he inherited Snyder's Classic Trimec program and the turf where world-class winners have been tested to the limit: Sam Snead in the 1945 Tulsa Open; Babe Zaharias in the 1946 U.S. Women's Amateur; Tommy Bolt in the 1958 U.S. Open; Bob Murphy in the 1965 U.S. Amateur; Bill Hyndman in the 1968 Trans-Miss; Dave Stockton in the 1970 PGA; Hubert Green in the 1977 U.S. Open. Raymond Floyd in the 1982 PGA . . . and who can say what name will be atop the leader board after the final round of the 1987 USGA Women's Mid-Am?

Schematic drawing shows why Super Trimec outperforms other herbicides.

1) Super Trimec has unparalleled power. It is able to penetrate the toughest of weed leaf cuticles so rapidly that even if it rains 15 minutes after spraying, the control will not be aborted because enough Super Trimec will be in the weed to do the job.

2) Once Super Trimec gets into the circulatory system of a weed . . . that weed is terminal. Even if it freezes before the Super Trimec completes its mission, it will remain viable and resume its activity once the weed begins to grow again.



3) Weeds have built in defenses to keep herbicides from entering the root system, but they cannot block out Super Trimec. Some extremely tough weeds may appear to resist Super Trimec for a short time, but in the end Super Trimec translocates throughout the total root system and the result is more immaculate turf.

YOUR GUARANTEE OF A TRIMEC® COMPLEX PROFESSIONAL QUALITY

SUPER

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"After a tour of Southern Hills with Robert Randquist and Leslie Snyder, I'm tempted to say that if I could start all over again at the beginning I think I'd study to be a Golf Course Superintendent. What a supreme satisfaction it would be to manicure holes like number 9, center right and number 10, bottom right. The container Leslie is holding is the original Trimec which we labeled *Fairway Broadleaf Herbicide Containing Trimec.*"

Everett Mealman

"Certainly our Trimec weed control program wasn't broke and didn't need fixing," laughs Randquist, "but we did continue testing other herbicides, just to be sure, and the tests revealed a herbicide that was better than Classic Trimec . . . It was Super Trimec!"

Professionalism Causes Switch To Super Trimec

As a dedicated professional, Randquist really had no choice. He had to drop Classic Trimec and go with Super Trimec.

Super Trimec is indeed a remarkable breakthrough in herbicide chemistry. We discovered in working with radioisotope tracer studies that formulations can make a difference in performance. In our experiments, we discovered the secret of how to combine certain esters with dicamba, which can be held firmly in place because it is in acid form. No one else has ever been able to do this, and of course this secret process is the basic building block of Super Trimec.

The spectrum of Super Trimec is so broad that we have not yet found a broadleaf weed it won't control; the penetration is so powerful that visual response begins to occur almost overnight; it is so flexible it can be applied virtually anytime when the temperature is above 40 degrees F. — even if the temperature starts to go down an hour after application; it is so active that only one gallon is required to cover four acres.

Groundskeepers who have been on a Super Trimec program for two years report that they spray only once a year, with an occasional spot treatment.

Super Trimec, of course, is labeled for professional use only — but you *are* a professional, so capitalize on your professionalism. Use Super Trimec. Reduce your costs and improve the quality of your weed control.

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In some local areas we are seeing an interest in a herbicide that does not contain 2,4-D. If you're in such a boat, we can help you with a D-FREE Trimec.

To all intents and purposes, the weed control of our D-FREE Trimec is very much like our Classic Trimec. It costs a little more because of ingredients, but it does have the same synergistic activity that makes Classic Trimec so effective. If you have any questions about any of our Trimec formulations, call **Toll-free 1-800-821-7925. In Missouri call: 1-800-892-7281.**

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grassy weeds."

Berry uses a preventive program to treat cutworms and grubs. He also stops problems from developing by paying close attention to soil nutrition.

Berry, a strong believer in the use of potassium, uses 2½ lbs. per 1,000 sq. ft. once monthly of 0-0-50 sulfate of potash.

He also uses 3 oz. per 1,000 sq. ft. of soluble potash each time greens are sprayed. By keeping phosphorus low, he has eliminated poa annua.

Cost considerations

"We figure fertilizer use at a price per acre," Berry says, "and we have found that on the turf we have developed on our 27 holes, the IBDU is less costly than most nitrogens."

Robert C. Klinesteker, golf course superintendent at the San Franciso Golf Club, Calif., agrees. "We have to watch all maintenance costs," he says, "because we operate with union personnel."

Wages are $10.54 per hour for a crew of nine on the 18-hole course.

Klinesteker first used slow-release nitrogen in 1984, because he wanted density and steady growth.

"I didn't want a flush of growth," he explains. "We don't have help on weekends; we mow Friday and we can't have high fairways by Sunday."

Klinesteker used two applications of Par Ex 24-4-12 on fairways and tees this past season.

"We applied the slow-release at the 1 lb. rate," he says. "We like the residual which produces good results on our very drouthy and very loamy sand."

He previously used urea and ammonium sulfate and had problems with rank growth.

Klinesteker had four years of golf course experience in Michigan before coming to the California club as superintendent in 1982.

His biggest problem on the course has been growth of English daisy. He has practically killed out this weed pest by using Banvel, which also helps control poa.

Because of this, and a soil nutrition program, fairways and tees are beginning to develop acceptable turf stands.

Management for this area is year-round. The Golf Club has some 500 members, although only 120 are active golfers.

"We can irrigate at will because the sand readily absorbs the water. But with slow-release nitrogen sources, we have found that we don't need to water as heavily," Klinesteker says.

He verticuts tees once monthly; and double verticuts greens each week.

Greens are cut six days each week with a walking mower; fairways every two weeks in summer at 7/16-inch height or at ½-inch. "Crew members," he says, "do a better job of repairing ball marks and other surface injuries. Riding crew members do not stop as readily and make the needed repairs."

Both superintendents couple good cultural practices throughout with their soil nutrition program; problems are fewer and less likely to develop.

WT&T

BENTGRASS SHOWCASE

Having a premium playing surface is a must at Stonehenge Golf Course in Tennessee, so bentgrass fairways were the obvious choice. Being on the Cumberland Plateau made it a little easier.

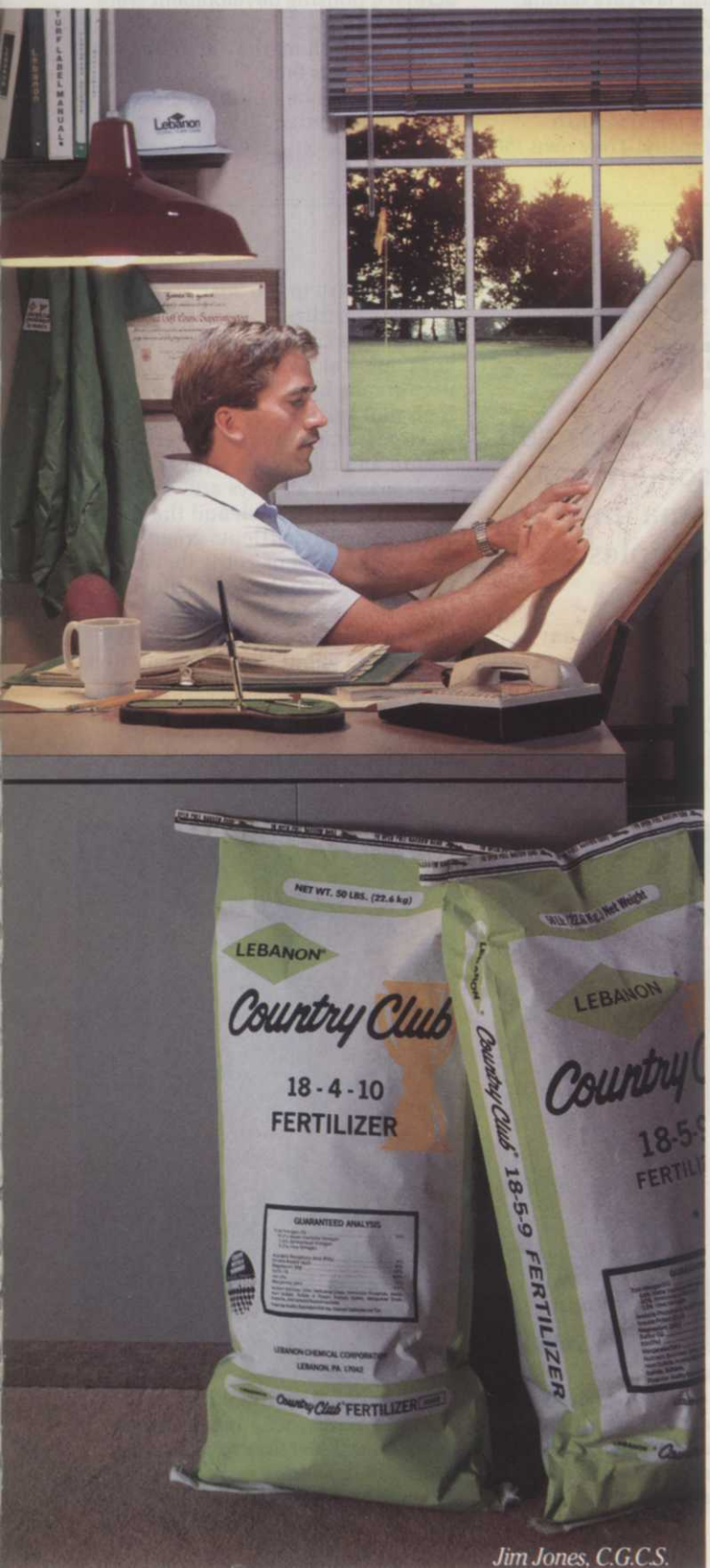
Keep the ball out of the rough at Stonehenge Golf Course in Fairfield Glade, Tenn., and a golfer can play bentgrass from tee to green. That's a rarity that far south.

Stonehenge is one of three 18-hole resort courses. The decision to establish bentgrass fairways is a result of a combination of elevation and a strong disease maintenance program.

"We were working to make this a showcase course, and this type of turf provides a premium playing surface," explains superintendent Harold Franklin. "We knew establishing and maintaining the bent would be difficult and

The Cumberland Plateau offers the opportunity to combine scenery with challenging golf holes.

Lebanon speaks your language.



Jim Jones, C.G.C.S.

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public courses using some higher-priced materials. Most can't afford them. But Scott's not afraid to spend money, if he knows there is a long-term payoff.

"I'm working with Elanco," he mentions. "I'm using Rubigan on greens with poa to see if we can slowly convert them to bentgrass without damaging their playability."

"I wouldn't last too long at a country club," he claims. "I couldn't put up with a greens committee long—doctors and lawyers telling me how to grow grass. I don't know a thing about medicine or law; how can they know anything about turf?"

The Scotts dream of the day when they can sell their farmland to a development company. They own 150 acres, which is worth about $1650 per acre now. Each acre would be worth about $75,000 ($25,000 per one-third acre) if a housing development were to materialize.

But until then, they are happy to live off greens fees.

"It's fun to be in the business now," Jay admits. "It's very lucrative."

SLOW RELEASE, FAST RELIEF

Slow-release nitrogen sources are perfect for golf course situations in both warm-season and cool-season areas of the country. La Paloma and the San Francisco Golf Club are examples.

Kent Berry has a thing for Jack Nicklaus-designed courses. He spent seven years at Muirfield in Ohio before becoming head golf course superintendent at La Paloma Country Club, a new Nicklaus course.

La Paloma is a 27-hole facility, serving a resort of private homes and public hotel facilities. It was built literally on top of the desert floor.

Errant balls land in the desert. The newly sodded or seeded greens, tees, fairways and roughs are an oasis in the desert. Few golf courses match its beauty.

Berry joined La Paloma as superintendent just two years ago when construction began. The first 18 holes opened for play in November, 1984; the last nine holes last August.

"We irrigate daily," he says, "and find that this, along with close mowing speeds the activity of any plant food applications."

Berry says that by doing this, he sees response of a slow-release nitrogen in one week, compared with the usual four weeks in other geographic areas.

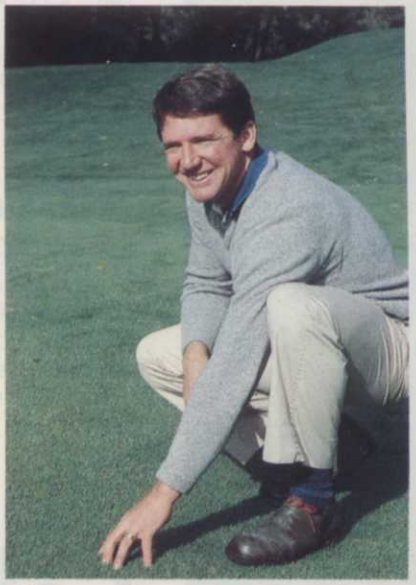
Since he waters every night with effluent, he uses IBDU (Estech's Par Ex brand), which depends on water for its release to the soil.

"We like the slow-release," Berry says, "and we don't develop any thatch or burn. We feed greens every four weeks and keep them cut at ⅛-inch. This gives us good control of clippings and no growth surges. We even feed in cold weather since this nitrogen can handle our temperature extremes (110 to the 30s)."

Some fertilizers, he explains, require lots of mowing. The IBDU does not. Yet, in less than two years, new greens have developed 6- to 8-inch root systems.

He verticuts fairways every month and overseeds with ryegrass each season. Fairways are maintained at ⅜-inch and the rough at 1¼-inch. He verticuts greens every two weeks. Greens get ½ lb. per 1,000 sq. ft. at each feeding during the summer and 1 lb. in the remainder of the season. Fairways are treated about every two months.

"We have a strong turf," Berry says, "and few weeds. We use very little pre-emergents. At times we will spot spray a few broadleaf and grassy weeds."

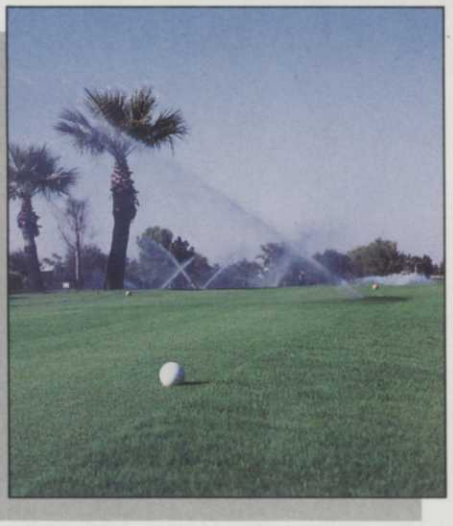


Robert C. Klinesteker, superintendent at San Francisco Golf Club, uses a careful soil nutrition program coupled with herbicides to reduce English daisy and build strong fairway turf.

Kent Berry, superintendent at La Paloma, manages 27 holes laid on top of the desert floor. All turf has been newly sodded or seeded during the past two years.

Palm Desert Greens Country Club is positive proof.

Maintaining one of the heaviest played executive golf courses in Southern California is a challenging job. An average of 290 rounds of golf a day puts tough demands on the turf, and on the irrigation system. That's why golf course superintendent Robert Stuczynski recently installed Weather-matic rotary pop-up sprinklers to upgrade the system at the Palm Desert Greens Country Club.



Stuczynski was won away from a brand he's used for more than a decade by Weather-matic's high quality design and features. The exclusive adjustable armspring allows fine-tuning while the sprinkler is on or off, and *stays* adjusted once set — a must for handling Palm Desert's exacting schedule of watering or fertilizing.

Weather-matic impact drive, rotary pop-up sprinkler heads are available in rugged cast aluminum alloy and high impact plastic housings for your long-range or medium-range needs — from golf courses, parks and athletic fields to commercial use.

Designed for years of dependable service, they offer many outstanding features. Like the backsplash control arm on K-50/80 and PK-50/80. And the optional check valve, available on PK models, to prevent backflow in low areas and damaging line surge. Plus only Weather-matic can help reduce your inventory with interchangeable parts for plastic and metal housings.

When you team up our rotary pop-up sprinklers, controllers and valves, you have a combination that can't be beat. Just ask Stuczynski. He's now finalizing a plan to changeover the entire Palm Desert system to Weather-matic. Because Weather-matic works. Write or call for all the details.

You can't beat the system.

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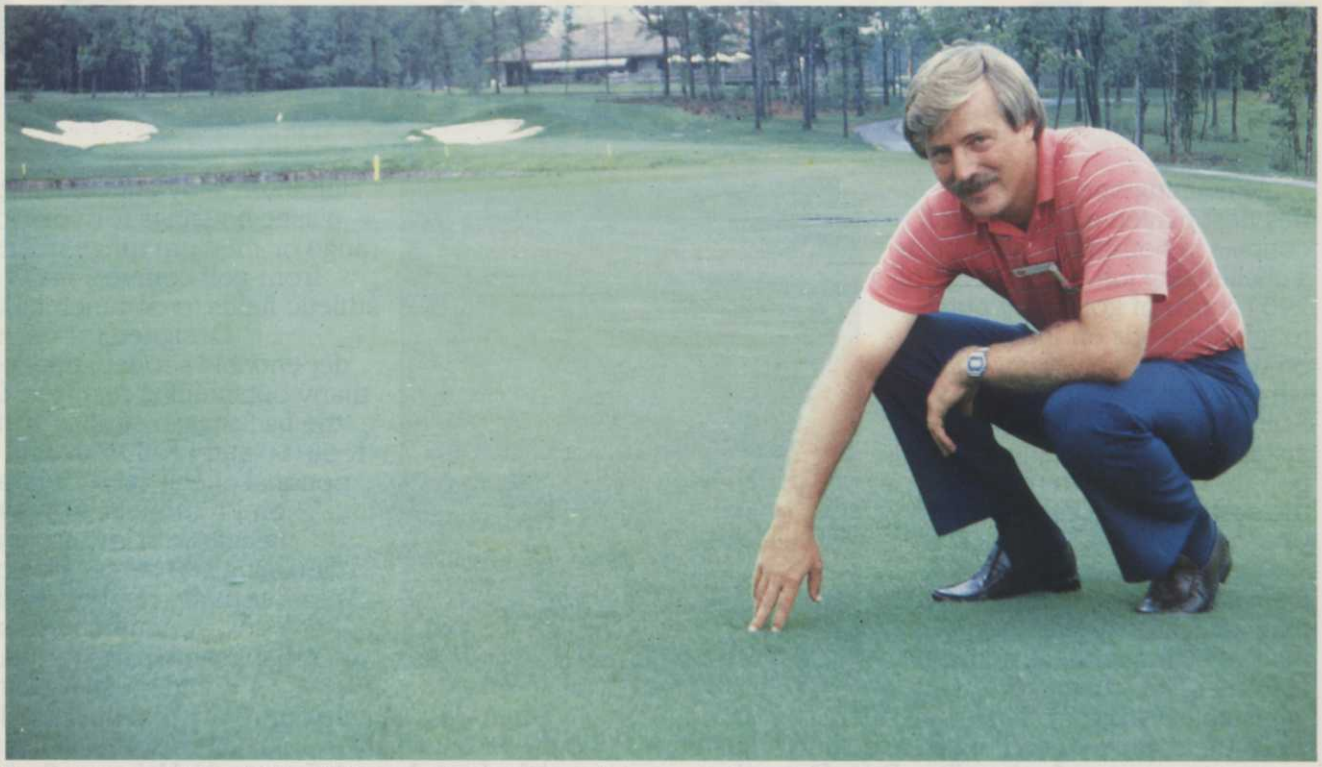

Superintendent Harold Franklin says that bentgrass fairways improve the playability and "showcase" image of Stonehenge.

expensive, but we place a high value on the premium playing surface."

Stonehenge could use bentgrass because of the course's elevation. "The heat in the South normally makes maintenance of bentgrass fairways extremely difficult," Franklin says. "But we're located on the Cumberland Plateau, with an average elevation of 2,000 feet. Our temperatures don't get quite as hot during the day, and it cools into the high 60s most nights. The cool temperatures give the grass relief and a chance to recover."

Even with the advantages of a high elevation, the heat and humidity promote disease development. From June through mid-September, Franklin uses a monthly preventative fungicide program on the fairways, with tees and greens treated every three weeks.

Battling brown patch

Brown patch is his biggest disease problem during summer, and dollar spot, red thread and snow mold are additional threats at various times of the year.

"We use Chipco fungicide in the preventative program, alternating every third application with Bayleton or 2787," Franklin says. "We also have to go in at times between the monthly sprays under high disease pressure situations to hold brown patch in check."

Franklin supplements his preventative spray program by culturally managing fertility to reduce disease pressure. He applies potassium nitrate in mid-May and again in mid-September, to build the potassium levels for drought and disease resistance.

"During the summer months, we don't fertilize the bentgrass because we don't want to promote rapid growth during the disease-prone period," Franklin relates. "High levels of nitrogen just prior to the onset of hot, humid weather increases the severity of the disease, so we try to hold off and keep the bent on the 'lean' side."

Franklin concentrates on keeping the bluegrass rough as weed-free as possible to control potential weed contamination in the bentgrass. He uses Presan liquid as a pre-emergent spray on tees and greens, and the same product in a dry form, blended with 19-4-9 fertilizer, on the fairways. In the bluegrass rough, he uses the 19-4-9 mixed with Chipco Ronstar G for annual grass control.

Going hog wild

Franklin uses a thorough insecticide program to maintain the fairways. Sod webworm and black cutworm are two of the major insect pests.

Compounding the normal grub problems are uninvited guests—wild hogs—which can cause some unusual turf damage to the rural, wooded course.

"If we don't keep the grubs under control, wild hogs can come onto the course and start rooting for them," Franklin says. "This gives us an additional incentive to keeping our grub problems under control."

Before the bentgrass could be established at Stonehenge, Franklin and his staff had to contend with a rock problem on the course. Rock had to be blasted out in places to allow for installation of the Toro irrigation system, which also contributed to difficulty in maintaining a proper ground for the system's safety during storms. Rock just beneath the soil surface had to be removed, fill brought in, and then additional topsoil applied to prepare an adequate seedbed.

"We hydroseeded the entire course and the bentgrass established itself very well," Franklin says. "The grass was all ready for play by June, but we had to pave cart paths and get the bunkers ready in order to open."

All the work and maintenance necessary to care for bentgrass fairways pays off for the players, especially since it can be mowed closely. Stonehenge hosted the 1985 Tennessee Open in only its second year of existence.

"It's obvious that you want the course to look and play well, but you want the players to feel good about the course after they've left," Franklin summarizes. "We want them to appreciate the condition and playability of the course, and I think the appearance and playability of bentgrass fairways helps them to do so." **WT&T**

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An a-Perm-o-Green employee uses a hand-held nozzle to spray a home lawn in Austin, Texas.

A GUIDE TO LAWN/LANDSCAPE FERTILIZATION

Fertilizers have a definite impact on root growth, carbohydrate reserves and stress tolerance. The dedicated turf manager closely monitors his fertilizer application timing, rate and method.

By Richard Rathgens, The Davey Company

Since the early 1970s, care of many residential and commercial lawns has shifted from the homeowner or property manager to the professional turfgrass specialist. This change in responsibility is evidenced by the tremendous growth of lawn care and landscape maintenance companies.

There are many benefits of professional lawn care for the homeowner and property manager. Using the expertise of a professional can optimize the potential beauty of a lawn. Many homeowners and property managers have realized a significant cost savings by contacting to have a lawn maintained as compared to purchasing the equipment and products themselves. Another benefit is a time savings which can be used for leisure activities by the homeowner or for other maintenance tasks by the property manager.

Traditionally, turfgrass managers have applied fertilizer during spring and fall using color and the amount of leaf growth as a guide to the rate and frequency of application. Although promoting good color and stimulating shoot growth are important objectives, often overlooked are nutrient influences on root growth, carbohydrate reserves and the plant's ability to tolerate disease and environmental stress. An understanding of the impact of fertilizer applications on these factors can refine a fertilization program resulting in a balance between the best in visual quality and a healthy turfgrass plant.

Timing

An important objective in the timing of fertilizer applications should be to promote root development and build carbohydrate reserves. The response of warm-season and cool-season turfgrasses differ in this respect.

The predominant cool-season turfgrasses (bluegrass, ryegrass and

fescue) initiate and develop their root systems in the early spring and fall. For this reason, fall applications of nitrogen are important to increase root growth. Favorable environmental conditions exist in the fall for rhizome and tiller development. Fertilization at this time will also improve turf density.

In addition to regular fall fertilization (Sept. to early Oct.), late fall or late season fertilization is being included in most maintenance programs. Late fall fertilization is applied when shoot growth slows or approximately at the time of the last regular mowing of the season. Nitrogen applied at this time greatly enhances the photosynthetic production of carbohydrates. These carbohydrates are not only used for fall root growth, but are also stored for use the following growing season, providing earlier spring green-up and an energy source for turfgrasses to recuperate from environmental and mechanical stress.

Another advantage of late fall fertilization is that it reduces the need for high amounts of spring-applied nitrogen. Excessive spring fertilization can actually reduce carbohydrate reserves and root development by stimulating rapid shoot growth. This is because growing shoots take priority over roots for carbohydrate use. Both spring and summer fertilization should be used to maintain the color and density produced with fall fertilization the previous year. Fertilization at these times should not produce succulent plant tissue which can increase the severity of turfgrass disease and reduce the plant's ability to withstand heat, drought, mowing or wear stresses. Applications of potassium will greatly contribute to the hardiness of the plant and help to "temper" the stimulating effects of nitrogen.

In contrast, most root growth in the warm season grasses, (bermudagrass, zoysiagrass, St. Augustinegrass) occurs during the spring and summer. Fertilization during these periods will stimulate root growth. However, only moderate amounts of fertilizer should be applied in early spring in areas where warm season grasses experience winter dormancy. Bermudagrass and St. Augustinegrass are subject to spring root dieback following spring green-up. Heavy fertilization during early spring may result in an additional stress during this critical survival period.

Like cool season turfgrasses, warm season turfgrasses accumulate carbohydrate reserves in the fall when shoot growth activity slows. Care must be taken with the timing of fall fertilization since late application may decrease low temperature hardiness. Maintaining adequate potassium levels in fall will increase the tolerance of warm season grasses to low temperatures.

Charlie McGinty of McGinty & Sons watches a boom spray fertilizer application to a large commercial landscape.

As with cool season turfgrasses, indiscriminate use of nitrogen fertilization in the summer can increase injury of warm season grass subjected to disease or environmental stress. As mentioned previously, maintaining adequate soil potassium levels will help warm season turfgrasses in their tolerance of heat, cold, mowing and wear stresses, and reduce their susceptibility to the numerous turfgrass diseases.

Rate

The annual nitrogen requirement (lbs. per 1,000 sq. ft.) for turfgrass is determined by considering the length of growing season, level of quality desired, and the species and cultivars present.

The length of growing season or number of days (months) between the last killing frost in the spring and the first in the fall varies greatly. Along the Gulf of Mexico and in certain areas of Arizona and California, the average growing season is more than eight months. In contrast, northern portions of Maine and Minnesota have as little as three-and-a-half months of growing season. Obviously, the longer the length of growing season, the greater the amount of nitrogen needed to maintain turfgrass quality.

Residential and commercial lawns can range from a weed-free turf of acceptable color and density to a season-long turf of premium appearance. For this reason, the rate of fertilization can be tailored to meet the expectations of the homeowner or property manager.

A common practice on large commercial lawns is to survey the property and classify portions of lawns into high versus low maintenance areas. Those designated high maintenance or having the most visibility receive higher rates of fertilization.

Turfgrass species and cultivars within a species can vary in amount of nitrogen required to maximize quality. Within the cool season grasses, sheeps, hard and red fescues require a low level of fertility, Kentucky bluegrass a medium level of fertility.

Cultural practices such as irrigation and clipping removal may require the use of higher annual nitrogen rates to maintain the desired turfgrass quality. Supplemental watering will increase the rate at which nitrogen is leached from the root zone. Losses of nitrogen are substantial, particularly when quick-release sources are applied to sandier soils.

Collection of clippings following mowing has been estimated to remove approximately 20 percent of the nitrogen applied to turfgrass. Should clippings be routinely removed from turf, additional nitrogen should be factored into the yearly total.

Phosphorus and potassium have been routinely applied with nitrogen, using fertilizer with ratios such as 3:1:2, 5:1:2 or 4:1:1. These ratios are based on the relative amounts of nitrogen, phosphorus and potassium found in turfgrass clippings but do not

take into consideration the inherent levels found in the soil. Rather than applying phosphorus and potassium each time nitrogen is applied, their use should be based on a soil test. The importance of determining inherent soil levels is exemplified when considering phosphorus application. Since many turfgrass soils contain high levels of phosphorus, little if any response is obtained when phosphorus is applied to established turf.

Two factors to be considered in making individual nitrogen applications are the nitrogen source and the time of year.

Applications using quick-release sources of nitrogen are commonly limited to no more than 1 lb. of nitrogen per 1,000 sq. ft. Lower rates of quick-release nitrogen sources will also minimize the potential of fertilizer burn.

In contrast, applications of nitrogen using controlled-release sources are generally made at rates from 1 to 3 lbs. of nitrogen per 1,000 sq. ft. The longer residual of controlled-release nitrogen sources reduces the need for more frequent applications required when using quick-release sources.

Suggested Nitrogen (N) Fertilization for Common Lawn Grasses (1)

Species	Time of Application (2) season	Rate of Application (3) pounds N per 1,000 square feet per year	Comments
cool season turfgrasses			
1. Fine Fescue	fall, late fall, late spring	1-4	Relatively low level of N required.
2. Tall Fescue	"	2-6	Generally receives less N than Kentucky bluegrass.
3. Kentucky Bluegrass alone or in combination with fine fescue and/or perennial ryegrass.	"	2-8	3-4 typical.
warm season turfgrasses			
1. Zoysiagrass	late spring, summer early fall	1-6	Relatively low level of N required.
2. Bermudagrass	"	4-10	Less N generally used on common Bermudagrass.
3. St. Augustine grass	"	2-8	---

(1) Consult with local turfgrass specialists for specific N recommendations for your area.
(2) Seasons of the year when fertilization should be emphasized.
(3) Rate of N used will vary with length of growing season, level of quality desired, in addition to cultural practices such as irrigation and clipping removal.

Method

Fertilizers can be applied in either dry or liquid forms. Research has shown that turf response is equal regardless of the form when considering a source of nitrogen such as urea. The choice of application method, then, may be decided on the turf manager's perception of productivity and personal preference.

Two types of spreaders are used to apply granular fertilizers—the gravity and the centrifugal. The gravity spreader applies a defined swath of fertilizer which can avoid waste in confined turf areas. But the centrifugal (or broadcast) spreader is commonly used by commercial turf managers because it applies a wider swath and can treat large areas more quickly.

Liquid fertilizer is either solubilized or suspended in water and sprayed on the turf. The amount of water used normally varies from 1 to 5 gal. per 1,000 sq. ft. Equipment can be broadly classified into either low-pressure spray booms or high-pressure (hydraulic) sprayers. Both types of sprayers feature a tank for holding the fertilizer and water, pump to build pressure to force the liquid from the tank to the nozzle, pressure regulator to keep the the pressure at the level desired, strainers or screens to keep solids from clogging the pump or nozzle, and nozzle(s) which deliver the spray to the turf in a particular pattern.

Low-pressure spray booms are operated at pressures in the range of 15 to 60 lbs. per sq. in. (psi) and deliver 1 gal. or less per 1,000 sq. ft. of spray. Low-pressure spray booms are designed to be driven over large areas, delivering the spray from a series of nozzles in distinct swaths. This type of sprayer is frequently used to treat commercial properties greater than one acre in size.

High-pressure sprayers can create spray pressure of several hundred pounds or more and use a hose and hand-held nozzle for directed applications of the spray.

Pesticide combinations

Use of fertilizer/pesticide combinations has become an accepted practice among most turfgrass managers whether applying fertilizers in a dry or liquid form. This technique can result in both time and labor savings.

Fertilizer/pesticide combinations can include herbicides, insecticides and fungicides, along with fertilizer. To optimize results, the label of dry fertilizer/broadleaf combinations will frequently recommend making the application following rain or irrigation or when a dew is present. This improves the adherence of the herbicide to the leaf surface of weeds and allows the herbicide to be dissolved, which maximizes absorption.

Two important factors which can reduce the effectiveness of liquid-applied fertilizer-pesticide combinations are incompatibilities and alkaline hydrolysis. In addition to checking the pesticide(s) label, a wise precaution before tank-mixing is to conduct a jar test for compatibility. Incompatibilities can lead to an unstable mixture and/or a chemical reaction between two or more tank-mix components. These can result in one of more of the following: failure of the equipment to apply the tank mix, poor pest control or turf response, and phytotoxicity.

Alkaline hydrolysis is the degradation of a pesticide due to mixing the pesticide in water with pH higher than 7.0. Some common pesticides subject to aklaline hydrolysis are organophosphate insecticides (Dursban, diazinon, Dylox), herbicides (bensulide), carbamate insecticides (Sevin) and certain systemic fungicides such as benomyl.

To determine whether alkaline hydrolysis will affect the pesticide application, have the water's pH tested with a pH meter or litmus paper. Should the water prove to be alkaline, check with the pesticide manufacturer(s) for their suggestions on pH correction. **WT&T**

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Circle No. 119 on Reader Inquiry Card

ENDOPHYTES: AN UPDATE

In 1983, WEEDS TREES & TURF first reported on insect-resistant turf containing endophytes. Today, researchers are discovering more about the fungus.

It may be possible some day to buy red fescue seed containing insect-resistant endophytes. Dr. Bill Torello at the University of Massachussetts has successfully "cloned" red fescue plants from tissue cultures inoculated with endophytes. Torello is also working with bluegrass varieties.

An endophyte is a fungus found in certain turf varieties, particularly ryegrasses and tall fescues, which makes the turf resistant to various insects and possibly diseases. Although the fungi were first discovered in New Zealand in the 1940s, it's been in the last several years that intense research on endophytes has been done in the U.S.

Endophytes aren't found in bluegrass and are rare in red fescue. Breeding endophytes into these is impossible since they are maternally inherited. A ryegrass containing endophytes can't be bred with a bluegrass. Inoculating plants with endophytes kills the plant.

The only way to get endophytes into a turf plant is to take a group of cells from a plant, inoculate the callous cells with the fungus, then regenerate plants from the cells. "It's like taking a finger nail from you, and regenerating a new you," Torello says.

The plant generated from the inoculated tissue can then produce seed. "Once the endophyte is established, it goes through the plant and resides there," Torello explains. "When it produces seed, it sits in the seed too."

Such seed could eventually be marketed. But that's years away, says Torello.

Only field testing will reveal if the endophytic seed actually produces a more insect resistant turf than a variety already on the market.

Torello has had success generating red fescues containing endophytes, but hasn't gotten past the inoculation stage with bluegrass.

Torello admits the techniques need refinement. For one thing, researchers have discovered four or five different types of endophytes. So the endophytes found in ryegrass are not necessarily the same as the ones found in tall fescues.

ENDOPHYTE LEVELS IN PERENNIAL RYEGRASS VARIETIES

Variety	High	Moderately High	Moderate	Low
Allaire				X
All*Star		X		
Birdie II		X		
Blazer				X
Citation II	X			
Commander	X			
Cowboy		X		
Dasher		X		
Dasher II	X			
Delray			X	
Derby			X	
Elka				X
Fiesta				X
Fiesta II				X
Gator				X
Jazz		X		
Linn			X	
Manhattan II				X
Omega II		X		
Ovation				X
Palmer			X	
Patriot			X	
Pennant	X			
Pennfine			X	
Prelude		X		
Premier			X	
Ranger				X
Regal	X			
Regency			X	
Repell	X			
Rodeo				X
SR 4000	X			
ST 4100	X			
Sunrye	X			
Tara				X
Vintage		X		
Yorktown II				X
SR 3000 Hard fescue	X			

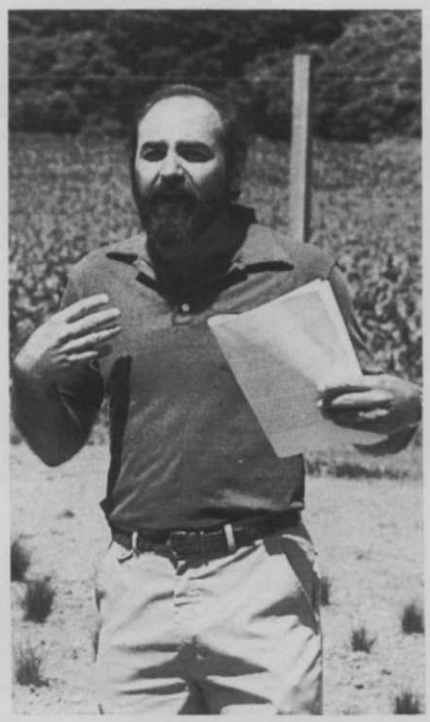
NOTE: This data from Rutgers University is obtained primarily from seed lots submitted to the National Testing Program. Seed lots may contain lower percentages of seeds containing viable endophytes because of possible loss of viability during seed storage.

Dr. Reed Funk at Rutgers University is working on characterizing the various endophytes, and pinpointing the role they play within the plant.

"The use of endophytes in plants can provide biological control against insects without using chemicals," Torello explains. "But it's not the answer. Eventually we want to change the genetics of plants."

Torello is one of the few researchers in the world trying to change the genes in turf through means other than breeding. Although private corporations have large genetic engineering research staffs, almost all the research deals with food crops, in an effort to increase yields.

"Tissue culture genetics is new to the turf area," Torello says. "People think it's a pipe dream. It just takes time." **WT&T**



Dr. Bill Torello thinks the industry will eventually change the genetics of plants.

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comparisons seem obsolete

and 856 each feature three tractor-mounted reels. All are available with 4-, 6-, 8-, and 10-blade reel options.

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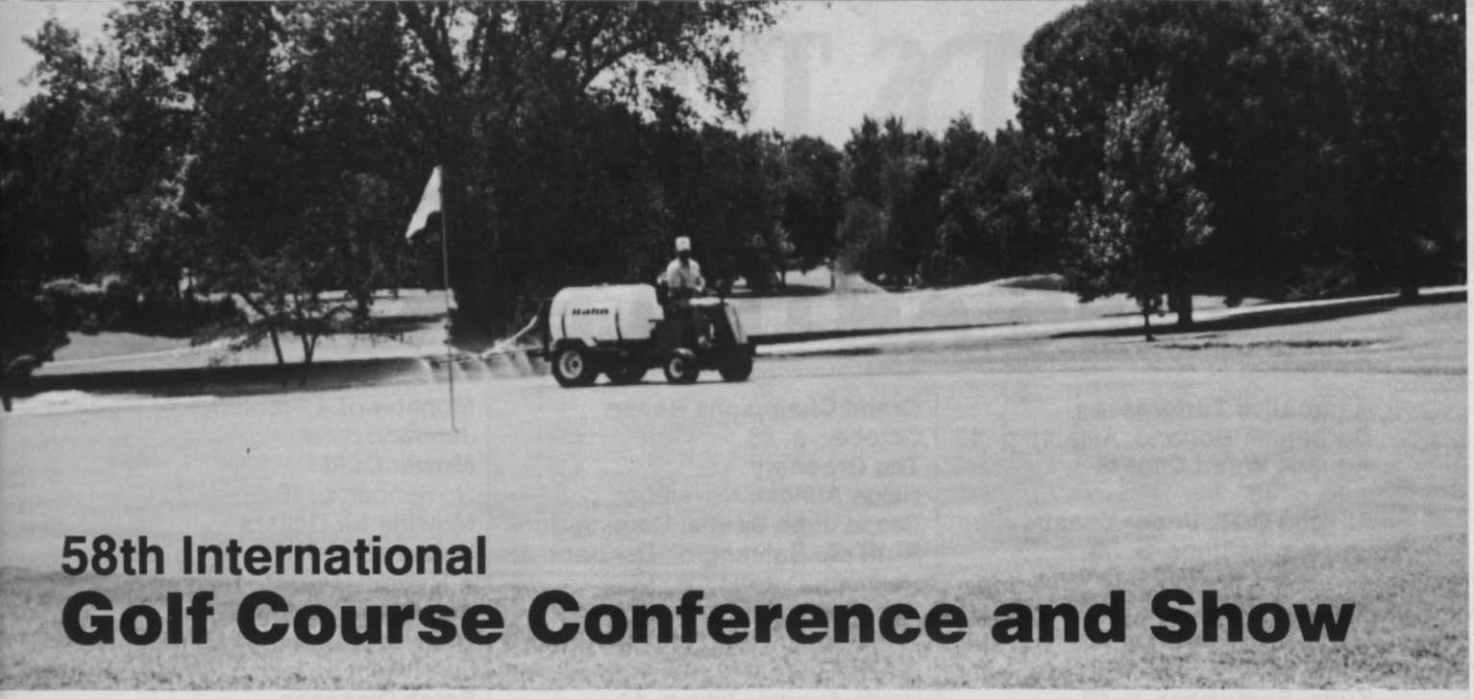

58th International Golf Course Conference and Show

Phoenix Civic Plaza January 26 - February 2
Schedule of Activities

• Saturday, January 24 (Tucson)
8 a.m. to 5 p.m.-One day seminar:
USGA Intermediate Rules of Golf

• Sunday, January 25 (Tucson)
8 a.m. to 5 p.m.-One day seminar:
Business Communication & Assertiveness Techniques

• Monday & Tuesday, January 26 & 27
8 a.m. to 5 p.m.-Two day seminars:
Irrigation Part I: Equipment & Technology
Insects of Turf & Ornamentals I
Golf Course Design Principles
Introduction to Soil Science
Weed Identification & Control
Landscape Plant Materials
Introduction to Surveying
Plant Nutrition & Fertilizers
Basic Turfgrass Botany & Physiology

• Tuesday, January 27
8 a.m. to 5 p.m.-One day seminar:
Business Communication & Assertiveness Techniques

• Wednesday, January 28
8 a.m. to 5 p.m.-One day seminars:
Familiarization With Accounting Procedures
Negotiating
History & Function of GCSAA
Cardiopulminary Resuscitation
Newsletter Editors

• Wednesday & Thursday, January 28 & 29
8 a.m. to 5 p.m.-Two day seminars:
Irrigation Part II: Systems Design & Management
Turfgrass Qualities, Uses & Sources
Golf Course Construction & Project Management
Basic Horticulture Methods
Disease Identification & Control

• Thursday, January 29
8 a.m. to 5 p.m.-One day seminars:
USGA Golf Course Rating System
Effective Business Writing
Budgeting & Forecasting
The Asst. Superintendent: Functions & Responsibilities
8 a.m. to 5 p.m.-Certification Exam Prep Courses
1 p.m. to 5 p.m.-Half day seminar:
Practical Tee Management for Golf Courses
5:15 p.m. to 6:30 p.m.-Opening Session

• Friday, January 30
8 a.m. to noon-Concurrent educational sessions:
Practical Golf Course Management I
Fairways: Changes & Practices
Construction Techniques in Renovations
New Products & Technology
11:30 a.m. to 1 p.m.-CGCS Luncheon
1 p.m. to 5 p.m.-Concurrent educational sessions:
Practical Golf Course Management II
Your Spouse, Your Family & You
Organizational Management
High-Tech Turfgrass Management Through Computers
5:15 p.m. Members' Briefing/Meet the Candidates

• Saturday, January 31
6:30 a.m. to 8:30 a.m.-Prayer Breakfast
8 a.m. to 5 p.m.-Sports Turf Managers Assoc. Workshop
9 a.m. to 5 p.m.-Trade Show Open
9 a.m. to 3:30 p.m.-Certification Examination
1 p.m. to 5 p.m.-Concurrent educational sessions:
American Society of Golf Course Architects Conference
National Golf Foundation Workshop
Golf Course Builders Conference
International Golf Course Management
Military Golf Course Management

• Sunday, February 1
8 a.m. to 11:30 a.m.-Concurrent major speaker sessions:
Rita Davenport
Jack Kaine
Dr. James Melton
9 a.m. to 5 p.m.-Trade Show Open
11:30 a.m. to 1 p.m.-Keynote Speaker Brunch
1 p.m. to 5 p.m.-Half day seminar:
How to Use the USGA Turfgrass Information File
8 a.m. to noon-USGA Green Section Conference
9 a.m. to 3:30 p.m.-Certification Examination
1:30 p.m. to conclusion-Annual Meeting
6 p.m. to midnight-Annual Banquet, Show & Dance

WEEDS TREES & TURF

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State of the Green Industry

"I have only eighteen concerns when selecting my greensmowers."

Peter Smith, Superintendent
Shinnecock Hills Golf Club

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this page looks like a broadleaf weed.

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At Druid Ridge, vice president of operations Bob Larson uses a combination of Roundup and Surflan for areas around headstones at the Baltimore, Md., cemetery.

AN OUTDOOR ART MUSEUM

Rich in tradition, Druid Ridge cemetery in Baltimore is a unique 230 acres. Its unique head landscaper could be the reason.

by Heide Aungst

As if he were sitting around a campfire, Bob Larson recited his favorite ghost story.

"They call her Black Aggie...It's said people have died of fright in her arms..."

Larson continues, telling of fraternity dares to sit in Black Aggie's arms through an entire night. "She was beautiful," he remembers, as if he's lost a close friend.

He drives by the site where she once rested. An empty stone remains, the family name "Agnus" engraved in the rock.

Black Aggie, a priceless black granite statue, is now in the Smithsonian Institute.

A visit to Druid Ridge Cemetery in Baltimore is like a visit to an art museum. Some of the statues marking graves date back to when the cemetery was built in 1896. So do some of the trees.

Larson, vice president of operations, points to a beautiful blue atlas cedar at the entrance. The tree is nearing the century mark.

Nearby is a beautiful large purple leaf beech. The Japanese and maraschino cherry trees are beautiful in the spring, he says.

Larson's 230 acres are as much an artwork as the granite statues his crew mows around. Druid Ridge won the PGMS Grand Award six years ago.

A home for wild ducks

A seven-acre lake, maintained with copper sulfate, gives visitors to Druid Ridge the sense of being in a park. In fact, Larson says, people visit regularly just to feed the wild ducks, which sometimes number close to 175.

But maintaining a cemetery is different from maintaining a park.

Ghost story over, Larson dismisses the myths of what it's like to work in a cemetery. "They're headstones, not tombstones," he says. "This is a

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Embark PGR should be tank-mixed with Trimec Broadleaf Herbicide to optimize the efficiency of maintaining grass at an acceptable height in a weed-free condition.

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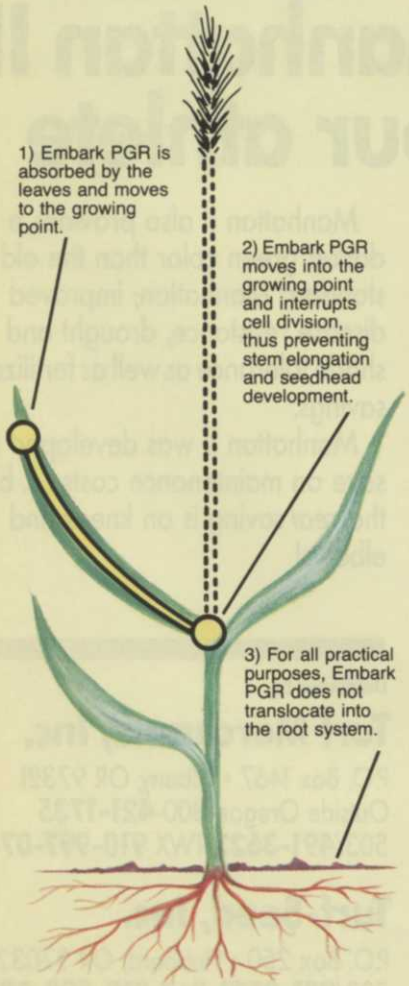

Thousands of groundskeepers and vegetation control managers have proven that one spray treatment of Embark PGR can eliminate the need of mowing for up to 8 weeks of such grasses as Kentucky blue grass, fescue, timothy, perennial rye, etc.

Just think what this can do for your budget!

It costs up to $1,200.00 a mile for mowing along highways, and up to $35.00 an acre for mowing a cemetery, a golf course rough or an industrial site, according to many analysts. Obviously, your costs will depend on your labor and equipment situation.

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The saving will vary depending on your own conditions, but in general round numbers it usually costs less to spray an acre with Embark PGR than it does to mow it. So the amount you can save by using Embark PGR depends on how often you would normally mow the area during the 8-week period that Embark PGR suppresses growth . . . and how interested you are in the cosmetics.

If all you want to do is suppress growth in an industrial site or a right-of-way, simply spray the area when the grass begins to grow vigorously in the spring, and forget it for 8 weeks. If you want a neater, more uniform look in an area such as a cemetery or a golf course rough, mow the grass once, either before or several days after spraying Embark PGR. To control broadleaf weed problems, tank mix the Embark PGR with Trimec® Turf Herbicide.

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Larry Farnell
Holy Cross Cemetery
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"We want roadsides to have a neat, clean appearance. Embark PGR certainly reduced our mowing costs."

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We have a booklet with a worksheet that will enable you to compare your own mowing costs with the cost of using Embark PGR.

This worksheet will be especially helpful if you have associates who need to understand the money-saving benefits of Embark PGR.

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682/1186

Druid Ridge, built in 1896, features a slew of trees close to 100 years old.

cemetery, not a graveyard."

He confesses he was hesitant to take the job.

But in 1978, the cemetery's executive vice president asked Larson's brother, Mike, if he knew someone who could maintain a cemetery the way Mike maintains a golf course (he's superintendent at Rockville Golf Club).

Mike suggested they contact Bob, who wasn't very happy as assistant landscape manager at Johns Hopkins University. As identical twins, the brothers have a lot in common—including maintaining turf.

Larson never regrets leaving Johns Hopkins. "You don't have a bunch of drunken kids at night tearing up things," he says.

He's also glad he's steered clear of golf courses. "I'm not married to my job," he explains.

Balance means happiness

Larson and his wife have four boys ages one to 16. His family gets all his attention when he's home. His job gets 100 percent when he's there. Balance is the key to a happy life, he says.

He also has to juggle working at two cemeteries. In addition to Druid Ridge, Larson oversees 430 acres at Loudon Park, a cemetery built in 1853.

He employes 13 full-time people and five part-time at Druid Ridge, and 25 full-time, 14 part-time at Loudon Park.

He divides his time about equally between the two sites, although Loudon Park tends to have more burials.

Digging holes for the caskets is the part of the job Larson likes least. "We're like utilities, you have to dig in all types of weather," he says.

With Baltimore in the heart of the transition zone, Druid Ridge has both warm- and cool-season grasses. Larson describes it as "Heinz 57." Although some plots might be zoysiagrass or bermudagrass, the majority is Rebel tall fescue.

The head and foot-stones are lined up in aisles, making mowing easier. A small tractor always follows behind a large one to get missed areas.

That process saves time and labor. The crew mows at least once a week.

Larson uses only Ford tractors and backhoes because of their reliability. He estimates he has 20 tractors between the two cemeteries.

While other cemetery landscape supervisors squirm at the use of upright headstones, Larson says he prefers them. "Those flat stones freeze and thaw. They heave and move up and down," he says.

The proud inventor

Larson doesn't need tricks to trim around headstones. He uses a mixture of Roundup and Surflan, around July 1 each year, to kill the turf. Roundup initially kills the vegetation and Surflan provides the residual control.

"I think of myself as the inventor of that," Larson says proudly. "I started doing that eight years ago, before it was labeled to be used together."

Larson claims he doesn't do too many things out of the ordinary. With a budget close to $2 million, he's free to do just about anything.

Larson calls his operation a "self-contained entity." Loudon Park features a greenhouse where he grows all the perennials used in the gardens around the mausoleums at both cemeteries. The crew also does its own paving and construction work.

Only about three acres of Druid Ridge are irrigated. Larson doesn't do any special watering on the burial areas.

He fertilizes only once a year, usually in late September, with slow release nitrogen at 1½ pounds per 1,000 sq. ft.

Larson has experimented with Monsanto's new turf growth regulator, Limit. "It's the most promising one I've seen," he says. "It works. But I think people are expecting too much out of the PGRs. Areas still have to be maintained."

Some cemetery landscape managers use turf growth regulators around headstones to slow turf growth. Larson has used Limit on entire plots and has cut mowing in half during the six-week period it's active.

Still a 'long way to go'

The use of PGRs or the Roundup-Surflan mixture to kill turf around stones are fairly modern methods of cemetery maintenance. But Larson feels the industry still has a long way to go.

"Cemetery maintenance people are not an organized group and they need to be," Larson says. "About 95 percent of them are behind the times."

He blames the cemeteries for not going after good, well-trained people. He also criticizes landscape managers who don't keep up on the latest developments in the industry.

The reluctance of others to get into the industry does have its advantages for cemetery landscape managers. "You can just about name your price," Larson says. He has, after all, just bought his wife her first Mercedes.

But it's not the money that keeps Larson happy with his job. It's an overall sense of peace and contentment with life.

"If you're Christian, this is where life begins," Larson says, shrugging off any suggestion of a deeper meaning behind that statement. "I'm just your average run-of-the-mill Catholic."

Beyond religion, is the history lesson. "You're maintaining areas where people who helped form a country are buried," he explains.

Confederate soldiers who defended Fort McHenry and writer H.L. Mencken are buried at Loudon Park.

Someday, Larson hopes to be buried in the cemetery he kept beautiful for so many years.

"Yeah," he smiles, "I want to be buried on the highest spot and my epitaph will say, 'I'm watching what's going on.'" **WT&T**

Castle Pines Golf Club, twenty minutes south of Denver, Colorado, will host the inaugural "International" this summer.

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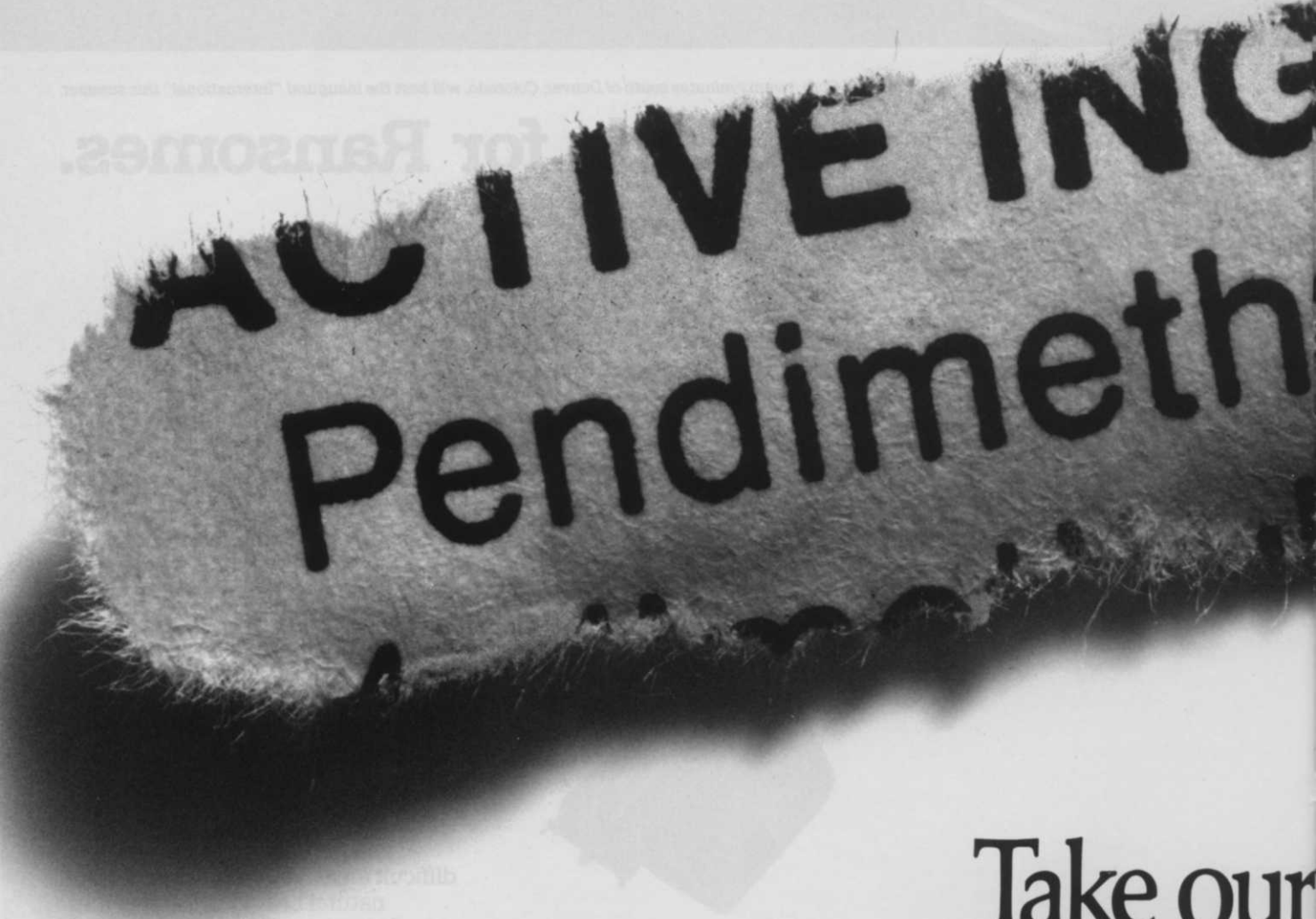

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Labels of your best pre-emergent crabgrass and goosegrass herbicides have one thing in common. And it can be summed up in a word: *pendimethalin*.

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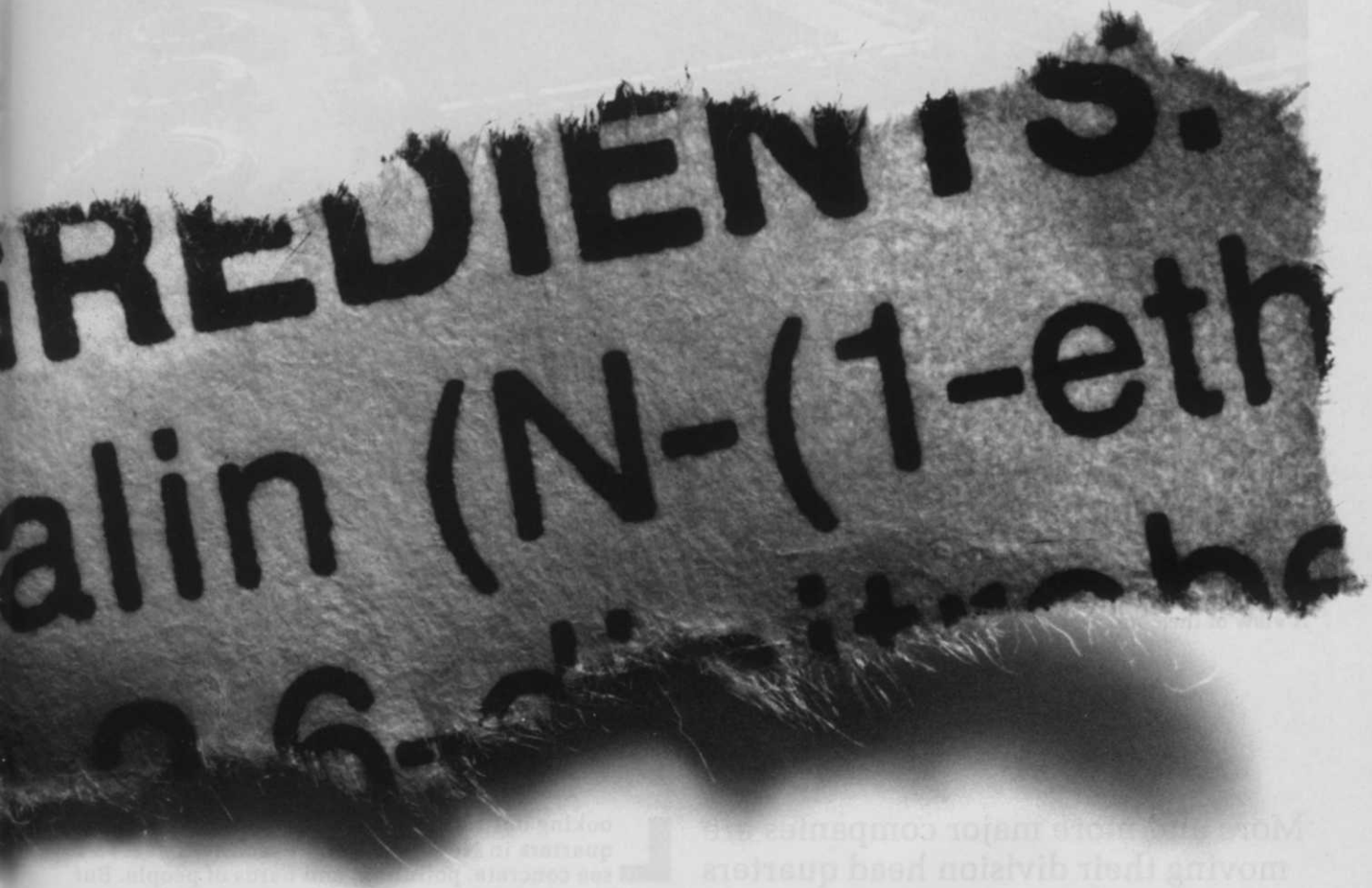
and goosegrass control.



word for it.

annua. Hard-to-control broadleaf species like oxalis and spurge are also eliminated with the same rate.

What's more, pendimethalin breaks down into the environment. And it doesn't move laterally through the soil. Which means it won't seep into bodies of water or stop vegetation you don't want it to stop. Plus, pendimethalin-based herbicides don't have an offensive odor like some products.

So remember, when you select a herbicide with pendimethalin on the label, you have crabgrass and goosegrass control in the bag. And our word. Always read and follow label directions carefully.

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A view of the courtyards at AT&T's Basking Ridge site. There are 1,200 trees on the 126 acres of land.

DIVINE DIVISIONS

More and more major companies are moving their division head quarters to country settings. Here's a look at what AT&T and Mobile Oil have done.

by Heide Aungst, associate editor

Looking out the window at their corporate headquarters in New York City, executives at AT&T see concrete, pollution, and herds of people. But at AT&T Communication headquarters in Basking Ridge, N.J., executives see lush green turf, blue skies, and herds of wild deer.

Even when a company's headquarters is located in the heart of New York City, it doesn't mean the executives forget about landscaping at other divisions...even though they can't enjoy the greenery themselves.

AT&T and Mobil Oil are prime examples. Both have headquarters in the city, but major divisions in picturesque country settings.

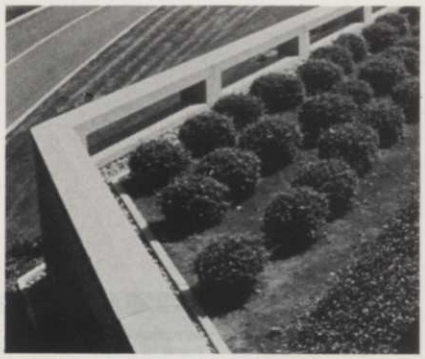
In fact, both companies have won landscaping awards for their division headquarters: AT&T for its Basking Ridge facility and Mobil for its marketing and refining headquarters in Fairfax, Va.

AT&T Communications, opened in 1977, sits on 197 sprawling acres—60 acres of lawn (a special seed mix of ryegrass and tall fescue created by the original landscape architect), three miles of paved roads, an 11-acre pond, and 14 acres of terraces.

AT&T employs its own supervisor of landscape and grounds, Ralph Ayres. Ayres is licensed by the EPA in pesticides, turf, and ornamentals, but the actual maintenance work is contracted out. Controle Maintenance was awarded the three-year contract a year ago.

"We write the specifications and they (contractors) abide by it," Ayres says. "But we're always open to suggestions."

Ayres says the concept of the landscape is to make a modern building look like it's part of the environment.



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86-59

Circle No. 103 on Reader Inquiry Card

They've done just that.

In 1982 and 1983, AT&T won the American Society of Landscape Architects award for environmental impact. Of course, Ayres stresses proudly, that's just two among "lots" of other awards.

The prize design prompts employees to arrive at work on weekends. Not to sit behind desks, but to bring friends and relatives for a tour of the grounds.

"We get a lot of tours. Local garden clubs walk through, even local landscape and architectural firms bring their new employees through," Ayres says.

30,000 shrubs

Ayres has the grounds down to a science. He can rattle off statistics as fast as an auctioneer can up the price of an antique desk: "...30,000 shrubs, six acres of ground cover, 1,200 trees including 30 around the pond, 40 acres of irrigated land including the 14 acres of terraces, and 2,500 pop-up heads in the irrigation system..."

Within the rural setting is something you certainly wouldn't find in a back-to-nature documentary, a heliport.

The heliport implements a unique landscape architectural option: formal shrubbery defining restricted areas.

About four years ago, AT&T installed an "underground" roadway leading from the heliport to the pond.

The road is actually made of perforated cement blocks measuring 250 ft. by 20 ft. Because of the perforation, grass grows through the blocks, making the road invisible.

Designed primarily to allow fire trucks to reach the pond to pump water in case of an accident at the heliport, the road actually appears to be part of the lawn, although the concrete underneath can support the weight of a vehicle without excessive damage to the turf.

As a precautionary measure, Ayres puts styrofoam swans on Bariet Pond to keep flocks of Canadian geese away from the heliport so they don't interfere with a landing. The geese are tagged regularly for studies.

Basking Ridge is a wildlife area located near the Great Swamp. Besides the sometimes-pesky geese, wild deer inhabit the land. Their biggest crime is eating the tulip bulbs in the winter. "We tolerate that," Ayres jokes.

A storybook setting

The wildlife is a beautiful addition to the storybook setting. A security company tours the complex regularly to ward off any poachers.

The 30 trees around the pond are all flowering so that color is reflected in the water. The pond—six feet at its deepest point—is stocked with bluegill and bass, although fishing isn't allowed. Ice skating is also discouraged because of AT&T's liability.

The terrace area offers a unique combination of nature cushioning the harsh blows of industrialization.

The parking garage consists of two underground floors. Eight courtyard terraces rise above the garage. Trees, including one 45-foot honey locust, rise from the garage through the terraces.

The design allows light and ventilation into the garage. Courtyards are heavily landscaped with shrubs to combat car exhaust. Trees on the terraces include cherries, locust, maples, crabapples, and white and black pines.

Steve Lowry of Controle Maintenance says the architectural design of the building is "spectacular in itself. In very few buildings will you see terraces done that well."

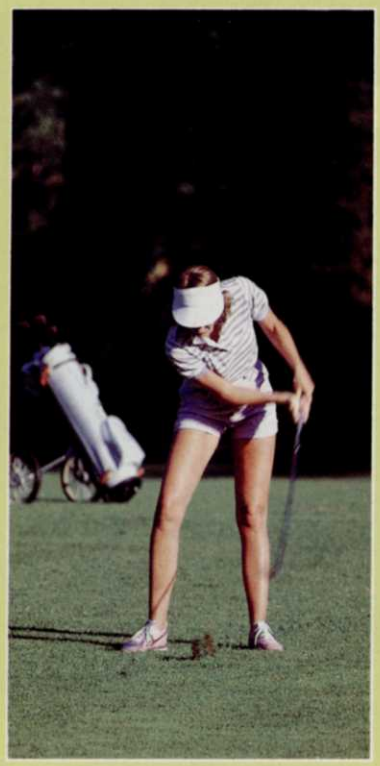
No matter where you stand at AT&T Communication, you see greenery.

"It doesn't stop at the front door," Ayres says. Elaborate interiorscapes blend the outside with the offices inside. "We try to provide a healthy environment for the employees," Ayres says. "It they're happy, they'll perform better."

Mobil Oil's marketing and refining headquarters in Fairfax, Va., is located on 126 acres. Just 18 acres boast turf while the remaining acreage is natural woods.

AT&T's award-winning Basking Ridge, N.J., facility features eight terraces rising above underground parking garages. The courtyards feature many trees including cherry, locust, maple, crabapple, and white and black pine.

Fine Fescue for Sure



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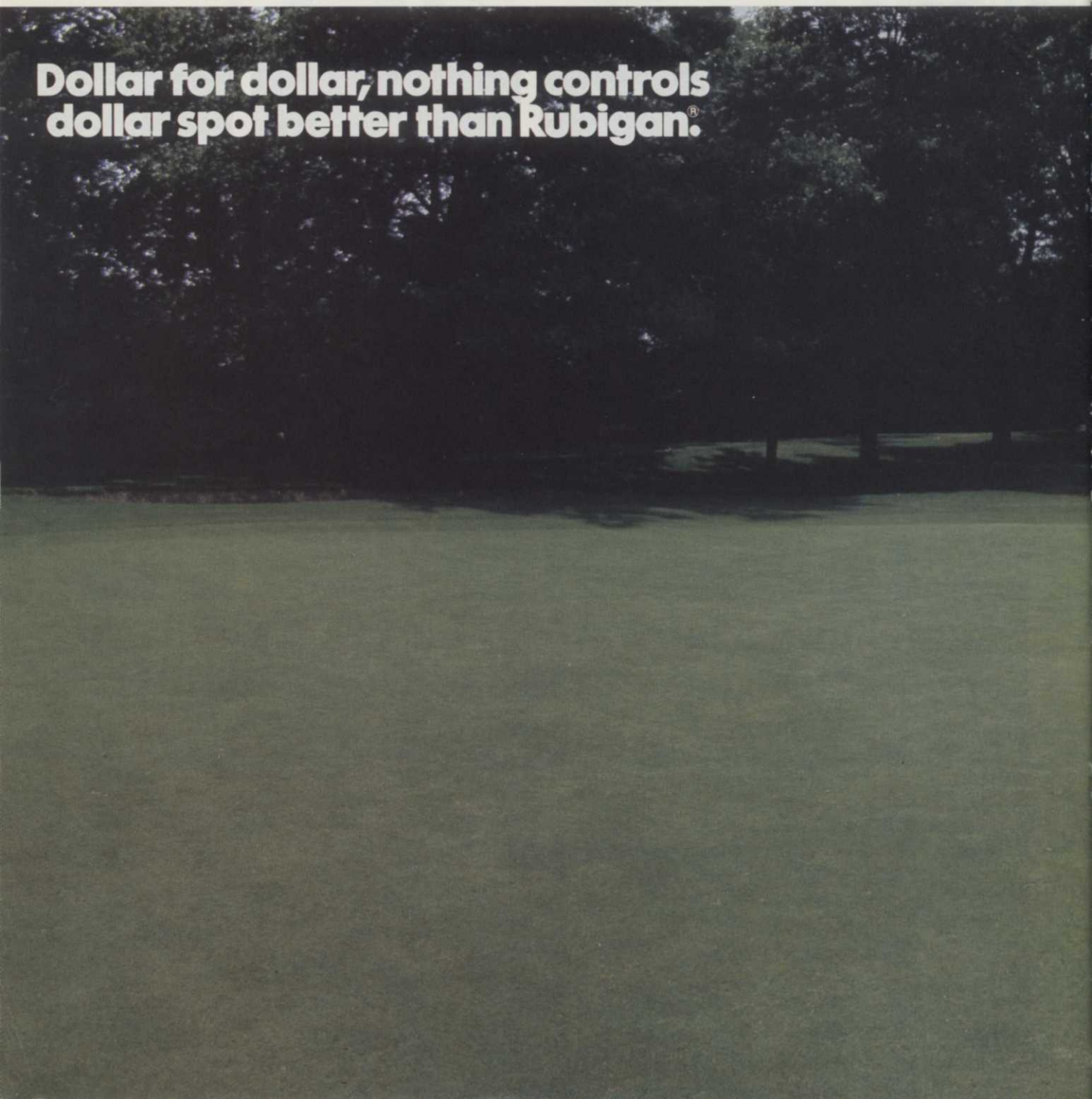

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Circle No. 117 on Reader Inquiry Card

A worker sprays trees near the entrance of Mobil Oil's Fairfax, Va., facility.

Lowry is a veteran of landscaping for major corporations. His company has worked for Allied Corp., Exxon Research and Engineering Division, and Arco Chemical.

He says there's really no common link between the companies. "They all have their idiosyncrasies," he says. He ranks AT&T "near the top."

"It's kept nice, but they don't do much with flowers," Lowry says. "Otherwise people would want to know why their phone bills were so high when they're spending money on flowers."

Lowry says the impact of the breakup remains to be seen. But he thinks the company might install more flower beds as profits increase.

Controle does maintain a small park (¼ acre) on the site, planted with perennials used for cut-flower displays inside. The company doesn't do the interiorscape. It is responsible for design, installation, maintenance, and snow removal.

Lowry says snow removal is often the most important part. "If the grass isn't mowed, it's not going to stop people from getting to work," Lowry says.

His favorite current project is renovating an old apple orchard into a working orchard. The orchard includes 48 apple trees from a farm which originally stood on the property. The apples will be sold by the AT&T Pioneers, a group of retired employees, to raise funds for charity.

Lowry's crew, sometimes as large as eight, also maintains two softball fields at the headquarters. For those who don't play in the company league, a nature trail winds through the area for lunch time jogs or leisurely walks.

"The management is very concerned with its corporate image in town," Ayres says.

A wooded setting

Mobil Oil's marketing and refining headquarters won an Associated Landscape Contractors of America grand award and merit award for commercial contracting in 1982. The site was built six years ago.

'We try to provide a healthy environment for the employees. If they're happy, they'll perform better.'

—Ralph Ayres
landscape supervisor
AT&T, Basking Ridge, N.J.

The headquarters is located on 126 acres. Of that, only 18 acres is turf, Most of the property is natural woods.

Mobil employs its own staff of one grounds foreman, one assistant foreman and four laborers. Operations manager Bill Phillips oversees the entire staff.

All formal planting is contracted out to Chapel Valley Landscape Co. of Woodbine, Md. Phillips credits them with turning the property into a blue-ribbon site.

Chapel Valley also takes care of pruning and insect and disease control. The Mobil staff maintains the turf and woods, and polices the entire area.

Grounds foreman Bill Kempf says he uses Kentucky-31 tall fescue, but overseeds with perennial ryegrass and hard fescue.

"K-31 is a good grass, but it's coarse and doesn't do well in the shade," Kempf says. "I prefer hard fescues. They require more care, but are better looking. They have a better color and finer texture."

Kempf uses fescues because they're drought-tolerant. Just five acres of the land is irrigated and the turf browns easily in August.

Phillips says the architect designed it that way because of the limitation of the wells on the property. "Fairfax County has a history of water shortages," Kempf adds.

Kempf's crew uses only walk-behind mowers. "We're not here to do it fast, we're here to do it right," he says.

The woods is primarily a hardwood forest with white, red and black oaks, poplars, evergreens, and standard American holly. A 1¼-mile nature trail winds through the woods around the building. Employees use it for exercise and fresh air at lunch. "Some are so religious that the only time they don't use it is during snow or rain," Kempf says.

The trail is left wild, except for some pruning of the trees for growth and shape. Dead or diseased trees are removed.

Occasionally, the crew will move wildflowers closer to the trail. The first year, an attempt to make wildflower beds around the trail looked unnatural.

The site is designed for spring color only. More than 10,000 azaleas bloom each spring in 34 flower beds next to the building. Also in the beds are three varieties of more than 300 crabapple trees and a cherry tree.

Mobil is adjacent to a hospital, apartment project, and office building. Kempf says he's seen some "friendly competition" develop between the landscapers at the various places. "We've improved the entire neighborhood," he says proudly.

Not only that, but there may be some psychology behind good landscaping. "Management supports us 100 percent," Kempf says. "The employees utilize the place and they're very happy. I think it makes a difference in their work."

More corporate executives also are discovering that a pleasant atmosphere makes a difference in employees' work. And more corporate divisions are moving out of the stifling city and into the open country. **WT&T**

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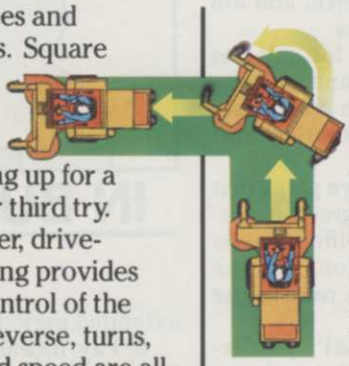

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THIRD OF THREE PARTS

PAY AS INCENTIVE

Good salaries alone are not enough to motivate employees. Special incentives should be required for exceptional performance.

by Rudd McGary and Ed Wandtke

MANAGEMENT IN BUSINESS

Salaries, in and of themselves, are seldom major motivators, as was noted here last month. Salaries come with regularity, don't reward special performance, and are expected by the employee.

Given these reasons for salaries being neutral (at best), managers who want to motivate through compensation had better find alternatives different than regular pay.

Here are some incentive plans that we've seen work in the green industries. They should be modified to meet your specific organization, but the basic ideas and practices remain the same.

1. Define "exceptional" performance, and pay for it. Most people are paid for doing an average workload. When compiling working objectives for the year, you should tell employees not only the "acceptable" work to be performed, but also the "exceptional" performance. This rating system gives the workers, even part-timers, goals for earning above the average pay base.

Though this can be used in both short-term and long-term time frames, it does not have to be over an extended period of time.

Wandtke and McGary are senior consultants with All-Green Management Associates in Columbus, Ohio. Dr. McGary focuses on marketing and managenent issues. Wandtke focuses on operations and financial questions.

2. Pay incentives for "team" performance. Take one unit of your workforce and give it a task requiring all its members to perform well. Pay a bonus to all of the members if the team is able to achieve a high performance rating. This creates a strong peer pressure to perform, and that can be highly motivational to team-oriented workers.

(One caution: if you are paying an incentive for team performance and you give the team several under-performers, you will find that even peer pressure will fail to motivate these people. The team must understand the goals and be willing to function as a team in order to achieve rewards for all the members.)

3. Always base compensation, paid as incentive, against a written and measurable goal. Instances exist of managers saying things like, "if you do a good job, we'll take care of you." What does this mean? That they will take their employees to the Bahamas for a six-week vacation, or that they will buy them an ice cream cone?

The above statement has two ambiguous phrases: "good job" and "take care of you." If you can't write down what a "good job" means to you and what "taking care" of someone means, it's highly likely that whatever reward you give will be disappointing to many of the employees. Always spell out what is expected as well as the possible incentives with each given time frame and task.

4. Leave some room in your budget for the unexpected reward. As we wrote last month, unexpected payments for exceptional performance can be extremely motivational. They should be a part of your budgeting process whether you put in a special line for them or simply have them under a miscellaneous expense.

If you already have a line in your budget for rewarding certain types of performances, you're more likely to give them than if you have to find the funding in another budget line. While this is not a formal "plan" for incentives, it can be a factor that will force you to think of incentive plans as you do your budgeting.

....Unexpected payments for exceptional performances can be extremely motivational.

Motivation depends on the individual to be motivated, the types of motivation available and logical, and the timing of the motivation.

Incentive plans can be motivational.

It takes a strong management effort to come up with plans that truly motivate both part-time and full-time employees. The interaction of the manager with his/her people will probably be the key to understanding what types of compensation and incentive plans will work. It's not easy to motivate employees, but the manager who is aware of the personal psychology and financial constraints imposed by the organization will be the manager who is able to have the workforce performing at its peak. **WT&T**

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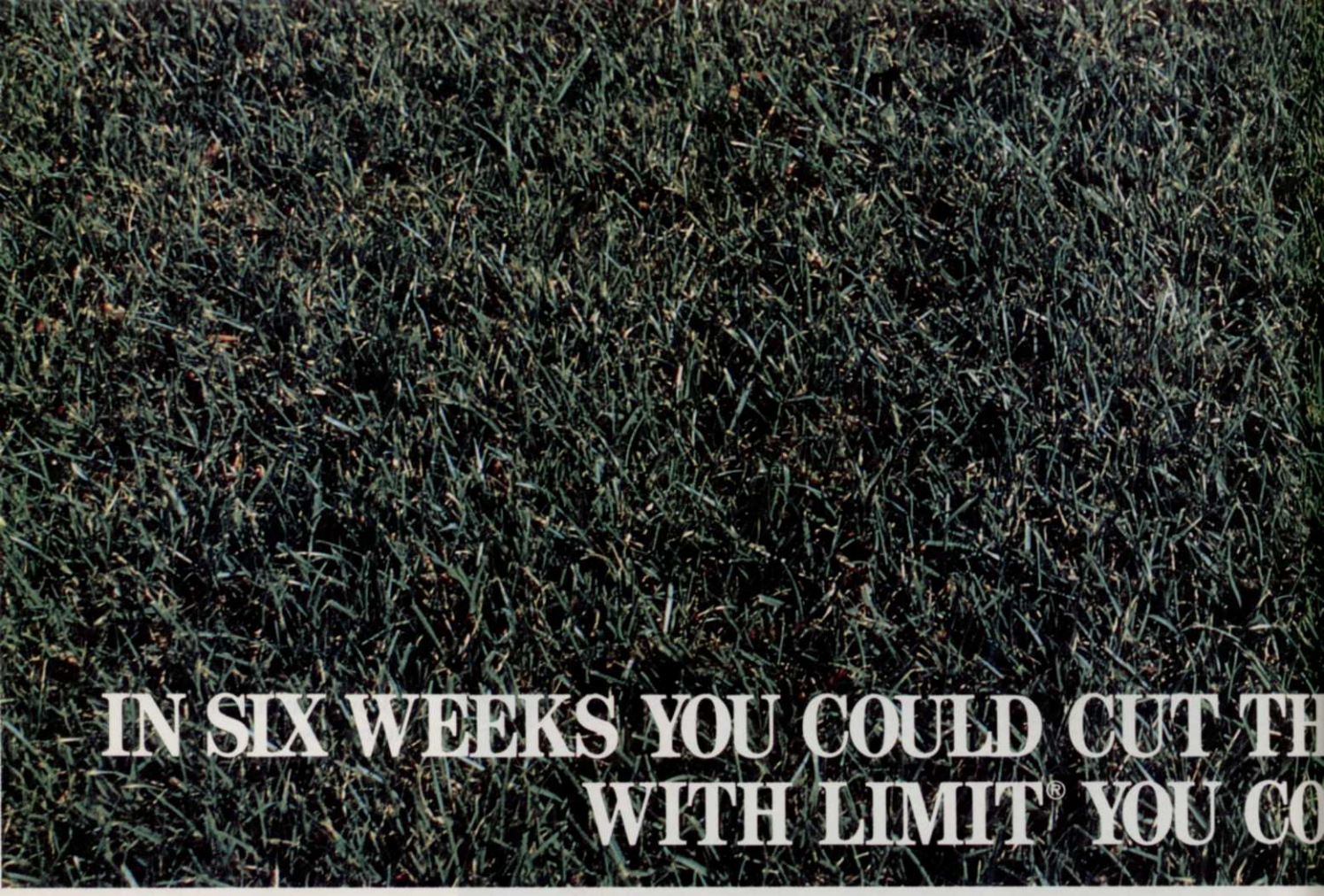

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Circle No. 255 on Reader Service Card

A little makeup enhances the real thing

by Bill Rhymes

We are surrounded by fakery everywhere, from capped teeth to Grecian Formula. Debate continues over fakes in the ornamentals industry. We have seen artificial grass and flowers. Most people do not like them.

Who wants to walk or lie down on plastic grass or be in a restaurant or shopping mall surrounded by plastic plants? Is there any place in the turf and ornamentals industry where a little fakery is acceptable by all? Yes, in the use, at certain times, under certain conditions, of colorants to enhance the beauty of the real thing.

The color of well-managed growing grass, as well as most foliage plants and trees, is green, of course. Green colorants are used in several ways on grass and foliage plants. These green colorants (GCs) are of several types, such as wettable powders, liquids used "as is" and concentrated flowables diluted with water. The last is by far the most economical to use.

The chemical formulations can be organic dyes (OD), inorganic dyes (ID) and specially formulated "paints" of acrylic/latex types (P).

Generally, ODs are short-lived and are used primarily as spray indicators. They are not a natural green grass color, but that does not matter since they fade rapidly and serve their purpose. IDs are natural green color, last several days, and are excellent as spray indicators or for touching up off-color turf. Ps are more enduring, lasting several months, and are non-staining when dry. All are formulated to be safe (non-phytotoxic) to grassplants and non-toxic to mammals, including man.

The widest use of GCs is on dormant grass. For years, superintendents of major sports stadiums have used GCs to "paint" dormant or off-color turf. However, dormant turf is not the only candidate, as there is a growing use of GCs on actively growing grass.

Landscapers have begun using paint on foliage plants for a more uniform look.

Several areas in which GCs are used on turf include:

- Athletic fields. Type P on dormant or off-color grass to give a natural instant "summertime" green color.
- Golf course greens, fairways, tees. P used in place of overseeding certain areas. IDs used to touch up off-color and diseased areas, and as a spray indicator. OD used as spray pattern indicator.
- Landscape contractor. Paint on new sod jobs can give a finished, natural look until sod is "pegged down" and growing.
- Professional lawn care. P is used on dormant home and commercial lawns. ID to touch up diseased or damaged areas; OD as spray indicator.
- Miscellaneous. Some odd but successful uses of P have been reported such as: lake dye; mixed with soil to replace divots (would be cheaper to fill divots with soil, then spot spray on top with P); and P on sod sample prior to display at trade shows.

The use of GCs on ornamentals, while not as extensive as on turf, is growing. Paint is used extensively on freshly cut Christmas trees prior to shipment to return the natural, uniform color where insects or disease might have caused damage.

Landscapers have begun using paint on foliage plants for a more uniform, finished look. In this use, however, care must be taken because too much color on tree branches and trunks can turn them an unnatural green.

Choose wisely

It is important to pick the right product for the right job. An OD, which fades rapidly, should not be used to color dormant turf. Conversely, a paint should not be used as a spray indicator since it is longer lasting. ID should be used only sparingly in mix as a spray indicator because it stains.

Cost-in-use should be studied carefully when selecting a P. A number of products on the market are low cost per gallon, but often that gallon is used as is, or mixed with just six to eight gallons of water. They can also look artificial, with an unnatural color on grass and ornamentals.

The best brand on the market is only slightly more per gallon, and can be mixed with up to 70 gallons of water. It is also the most natural looking, and once dry, won't rub off on uniforms, clothing or equipment.

Some of these products can be phytotoxic to grass and plants. Care should be taken to find one specially formulated to be safe for vegetation and humans. Also, don't be afraid to consult other superintendants, growers, stadium managers and the like. Most will be happy to help in finding the right products for a particular application. Products mentioned in this article are well-known to distributors. They, too, can be helpful in finding the right product.

Nothing is better than a disease- and insect-free, well-managed, natural growing plot of grass or ornamental plant. But when problems occur and nature has taken its course, even the best must use colorants. Using colorants in a wise and timely fashion can improve appearance. Though perfection can't be reached, image can be improved and a lot can be gained.

Bill Rhymes is executive sales representative of specialty agricultural products for Mallinckrodt, Inc. He is based in Shelby, N.C.

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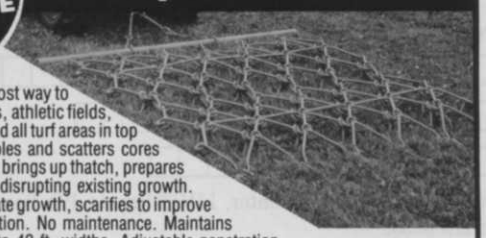

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PROBLEM SOLVERS

by **Balakrishna Rao,** Ph.D

Managing pesky bermudagrass

Problem: *We use fabric and Roundup to get rid of bermudagrass and it still gives us fits. How do we get rid of it? (Kentucky)*

Solution: Your Roundup treatment should give better results. Make sure that the mixing and application are done correctly. Bermudagrass management is difficult. However, proper application of Roundup is the best approach to the problem.

Bermudagrass spreads by producing lateral stems called stolons. Often stoloniferous plants require several applications. Therefore, repeat treatments as needed. Read and follow label specifications.

Spruce gall aphid control

Problem: *Every year we have problems managing spruce gall aphids. We are primarily interested in the one which produces galls at the tips of branches. We have used Sevin in the past. What are we doing wrong? When is the best time to apply chemicals? (New York)*

Solution: The problem you describe is commonly referred to as Cooley spruce gall aphid. The causal agent, *Adelges cooleyi*, is closely related to aphids yet is not an aphid; it is an adelgid.

Success in managing this pest depends on (1) understanding their life cycle, and (2) using the proper material at the proper time.

The adelgid has a complicated life cycle. It may alternate between spruce and Douglas fir and complete cycles may occur on both. Aphids overwinter as immature females at the base of the buds of spruce and Douglas fir. They mature in early spring to become a "stem mother," produce waxy filaments, and then lay several hundred eggs underneath.

After the eggs hatch, the nymphs migrate to the new growth where they feed at the base of the growing needles. This feeding stimulates gall formation which envelopes the young insects. By July or August, the adelgids migrate through an opening at the base of each needle on the gall to the top of the needles and transform into females with wings. These winged females may fly to Douglas fir or spruce and lay eggs on needles. These hatch and the nymphs overwinter as immature females.

On Douglas fir they lay eggs on the needle and a generation of "woolly aphids" is produced. The next summer these adelgids remain on Douglas fir or fly back to spruce. Sometimes Douglas fir may be so heavily infested that the needles will be covered with white woolly mass. No gall is produced on Douglas fir, but extensive feeding can produce distinct yellowish spots and bent or distorted needles.

To manage Cooley spruce gall adelgid problems, apply superior oil or oil plus ethion in April on spruce. Oil may temporarily remove the bluish color from blue spruce for up to four weeks but it may come back. Application should be done thoroughly to cover the crevices of bark or terminal twigs and base of buds on spruce and Douglas fir. After the galls open in late July or early August, apply either lindane, Sevin or Dursban on spruce or Douglas fir.

Maple scale treatments

Problem: *What is the best way to manage cottony maple scale on maple? Can we use oil? Would a general scale management approach, including one dormant oil spray plus a crawler stage application in summer, take care of the problem? (Michigan)*

Solution: Reports indicate that a dormant oil spray may be used before growth starts in the spring. Make sure to read and follow the manufacturer's recommendations. Some varieties of maple are extremely susceptible to oil injury.

If in doubt, spray the trees with Sevin, malathion, Orthene or diazinon around July 1 and again in 10 days. Be sure to cover the lower leaf surface with spray. Repeat applications as needed to manage the crawlers.

The right lime

Problem: *What are the different types of lime and what kind would you recommend for lawns? (Pennsylvania)*

Solution: Several different kinds of lime are available. Ground agricultural limestone (carbonate forms of calcium and magnesium) is the most commonly used. Calcium carbonate is known as calcite, while magnesium carbonate is referred to as dolomite. The use of dolomite is recommended if the soil is tested and found to be low in magnesium.

Two other forms of lime are available to correct the soil acidity—calcium oxide, sometimes called burnt or quicklime; and calcium hydroxide or hydrated lime. Calcium oxide has twice the neutralizing capacity, while calcium hydroxide has 150 percent the neutralizing power of ground agricultural limestone.

Both calcium oxide and calcium hydroxide may be difficult to apply because of their powdery form. Therefore, agricultural limestone is preferred by most lawn care companies because of its ease of application and lower burn potential.

Balakrishna Rao is Director of Lawn Care Technical Resources for The Davey Tree Co., Kent, Ohio.

Questions should be mailed to Problem Solvers, Weeds Trees & Turf, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.

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Circle No. 134 on Reader Inquiry Card

LETTERS

Safe athletic fields

To the editors:

We are grateful to your magazine and staff for the fine set of articles dealing with the safety of athletic fields in your September issue. Those of us who have been working for their improvement truly appreciate your interest.

Now, if we could only get the articles to those in the schools who need them. I'll get them to Texas schools if you can tell me how I can get permission?

William E. Knoop, Ph. D.
Texas A&M University
Dallas, Texas

(We are in the process of having the articles reprinted. Watch future issues of WT&T for instructions on obtaining the reprints.—Ed.)

To the editors:

I am the school-community relations director for the Wayne County Public Schools. The article ("Sidelined," September) is an extremely important informational tool to our administrative staff and athletic coaches on the conditions of athletic fields, with their relationship to injuries.

Your magazine has been extremely valuable in giving us a better knowledge of athletic turf. The articles in your publication stress all areas of landscaped design, athletic fields and golf course management. Please keep up the good work in providing the latest research in these areas.

Terry Pilkington
Wayne County Public Schools
Goldsboro, N.C.

To the editors:

The articles on treacherous turf were very informative and somewhat depressing. As a field manager, I find it very difficult to put in the time and effort it takes to improve the athletic fields.

Right now, we have three practice fields and a football field. The practice fields are in the baseball outfield and one is at a far corner of the school property on somewhat bumpy ground.

Schools today just do not provide enough dollars or manpower to get these jobs done at the time they should be done. Borrowing equipment takes extra time and limits your ability to do what you would like to do. I sometimes get the impression that the Superintendent of Buildings and Grounds is the goat between those who constantly call for more maintenance and those who say we've spent enough.

Needless to say that if superintendents were given more discretionary powers and communications were more open, we could do a lot more. However, I live in a realistic state: probably not a lot will be done until someone gets hurt badly or these suits that are wrecking the country subside.

P.S. *Two men* to mow four schools and related fields (over 100 acres), repair and maintain 13 vehicles and several mowers, deliver supplies, and maintain three playground areas, 13 ballfields, paint five fields once a week in the fall, track in the spring and plow snow and refurbish equipment in the winter is *no fun job*. There just is not enough time to even *properly* consider field maintenance. Planning programs without a real possibility of implementing them is almost *hopeless*.

Howard Parker
Newfane Central Schools
Newfane, N.Y.

To the editors:

I have always enjoyed reading your publication and appreciate receiving it monthly. You should be commended for the series on sports turf injuries. I was unaware of such things ans as a sports turf manager, appreciate the enlightenment. The articles were well-written and get the point across.

I plan to implement an improved program here with safety to player as a more important parameter.

Thank you.

Robert F. Michaels
Ricks College
Rexburg, Idaho

To the editors:

My hat's off to you. Fred Grau and a lot of other people have been working very hard to generate the type of exposure given in your September issue. People are starting to wake up to the dangers of artificial and poorly maintained athletic turf, and they will soon start demanding an improvement.

I thought the series was well done and aimed at the right audience, the professional turf managers. We have the expertise and the resources to do more. I believe with articles such as these, we will.

Jon Scott
Grand Traverse Resort
Acme, Mich.

(Golf course superintendent Jon Scott has hosted benefit tournaments for the last two years. Monies raised by five such state tournaments go to the Musser International Turfgrass Foundation, the parent organization of the National Sports Turf Council.—Ed.)

To the editors:

The impact of your September issue has only begun to penetrate. What a service you have rendered!

We volunteers wondered how we would reach the people who care and who want to help. Wonder no longer: the media has opened the doors.

It was thrilling to get a letter from a concerned parent. These are the people we want to reach!

We started with an appeal to the National PTA. Dr. Eliot Roberts' article in "PTA Today" elicited no response. Undismayed, we pushed on. Now, with your help, all we have to do is "sandbag the dikes to keep ahead of the flood."

Thank you for the great boost you've given to safer sports turf.

Fred V. Grau
National Sports Turf Council
College Park, Md.

(Dr. Grau and Dr. Roberts report renewed interest among field managers, judging by the inquiries they've been receiving. Dr. Jack Harper at Penn State University reported an average of six inquiries per day shortly after the September issue mailed. One nursery owner and parent who happens to be on his city's Board of Education, wrote Dr. Grau: "I have been concerned about the condition of our playing fields and practice fields. I have been reading the September issue of WEEDS TREES & TURF concerning safer athletic fields. I have convinced our athletic booster club and school board that it is time to do something about our athletic fields." Thank you readers.—Ed.)

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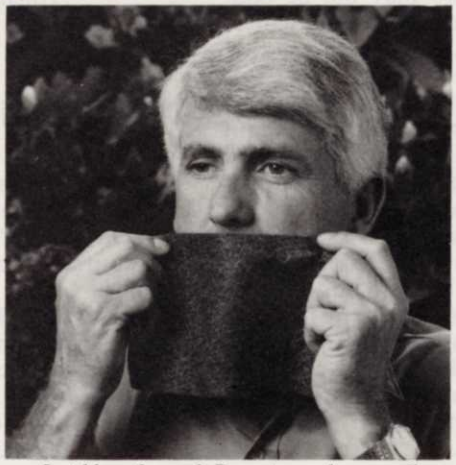

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Circle No. 148 on Reader Inquiry Card

Preventative medicine

To the editor:

I think the time has come for us in the landscaping industry to take action regarding the use of pesticides. I believe that the continued application of chemicals to the environment will cause even greater health problems than we are presently experiencing.

Stop and think how many chemicals enter the environment. The Earth is not a sponge that will continually absorb all our wastes. We will not be able to throw it away like a used oil or air filter.

Although there may not be conclusive evidence that chemical A causes cancer B, I am convinced that many cancers are linked to the environment. I am not going to wait for conclusive evidence that this is so. I want everyone's and my children and grandchildren to inherit a clean and safe environment.

The question is, then, what should we do as an industry? Before the finger turns to point and include us as polluters, we should have enough foresight to increase our efforts at using cultural, non-polluting alternatives: hand-weeding, insecticidal soaps, integrated pest management and so on.

This will mean the cost of doing business will rise and we'll have to charge more for our services. However, this is worth doing in terms of protecting the environment, and will be less expensive than chemical contamination suits. Preventative medicine is less expensive than major surgery.

We can, as landscapers, be caretakers and stewards of the land and set a leadership example. Or we can continue to do business as usual and suffer the consequences.

Robert Mulder
Amsterdam Landscaping
Raleigh, N.C.

On fertigation

To the editors:

In the June issue, I was and am interested in the article "Two Birds with One Stone," about fertilizing a golf course through the irrigation system.

Back in 1968, I was very much interested in developing a system to fertilize our golf course through the irrigation system. After two years of experimenting, I developed a method that was very successful. It took about only half the water, and I am sure we had fewer disease problems.

We used this method until the course was sold and I left—I did not care to work for the new owners. After this, the idea was discontinued due to the fact that I did not care to leave my method intact after how I was treated by the new owners.

I thought I'd pass this on for what it might be worth.

Harvey C. Dreibelbis
118 B Lowens Strasse
Freehold, N.J.

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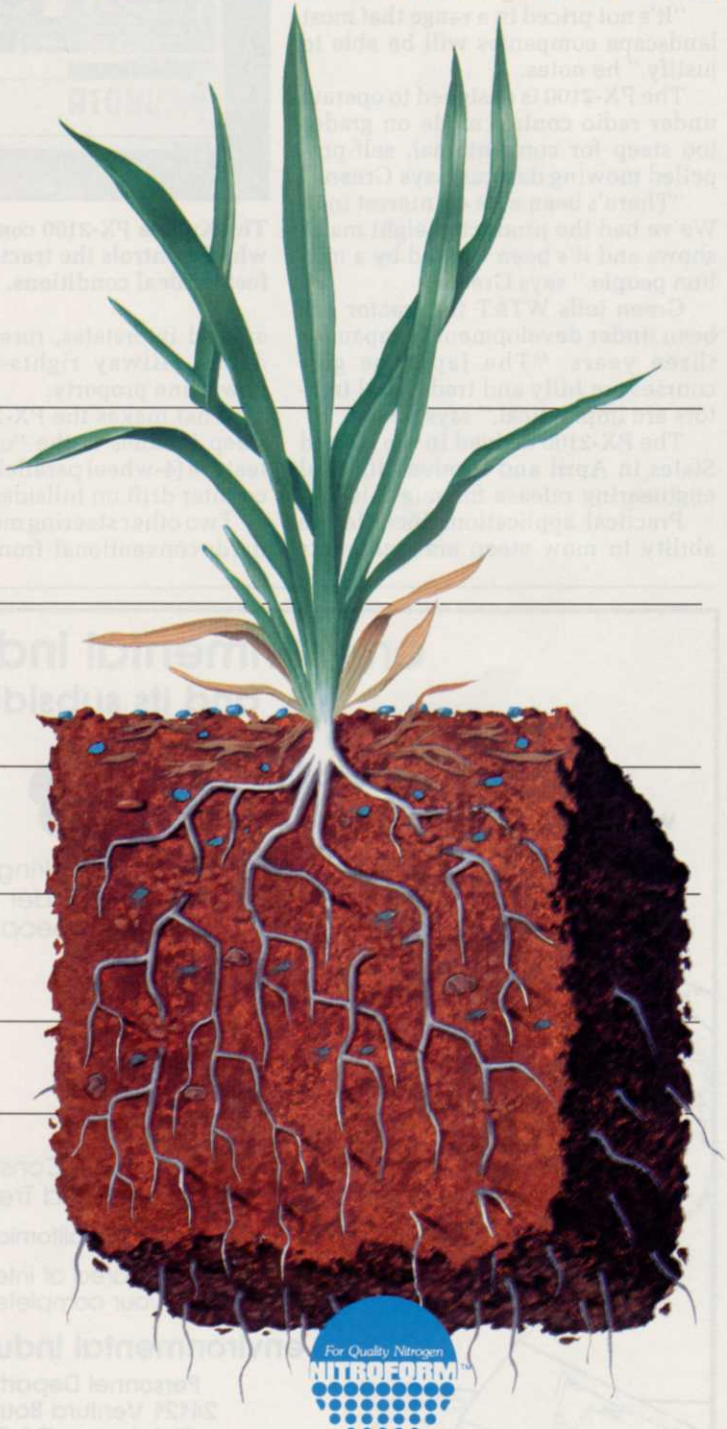

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Circle No. 142 on Reader Inquiry Card

PRODUCTS

A mower for tomorrow from Kubota Tractor

Kubota Tractor Corporation has introduced the industry's first fully remote-operated mower, the PX-2100.

It's available now, but be prepared. Its price tag: $22,000.

"It isn't something that will be sold in large volume," says Russ Green, tractor sales manager for Kubota.

"It's not priced in a range that most landscape companies will be able to justify," he notes.

The PX-2100 is designed to operate under radio control mode on grades too steep for conventional, self-propelled mowing devices, says Green.

"There's been a lot of interest in it. We've had the product at eight major shows and it's been viewed by a million people," says Green.

Green tells WT&T the tractor has been under development in Japan for three years. "The Japanese golf courses are hilly and traditional tractors are impractical," says Green.

The PX-2100 arrived in the United States in April and received its final engineering release for sale this fall.

Practical applications include the ability to mow steep embankments around interstates, reservoirs, lakes, dams, railway rights-of-way, and powerline property.

The Kubota PX-2100 control box which controls the tractor up to 300 feet in ideal conditions.

What makes the PX-2100 ideal for steep inclines is the "crab" steering feature (4-wheel parallel) which helps counter drift on hillsides.

Two other steering modes are standard: conventional front wheel, and 4-wheel opposed steering for tightest turning radius (six feet).

The PX-2100 won't replace the need for a worker. The worker guides the mower with a battery-powered hand-held control box.

The box allows control from a distance of up to 300 feet in ideal conditions. The machine shuts down when the radio frequency is interfered with.

Other features include fully remote or manual operational control; automatic intermittent fan reversal to prevent overheating in prolonged usage periods; and automatic differential lock which allows all four wheels to turn at the same time.

The tractor has built-in safety over-rides that automatically stop the engine in a number of situations such as a power voltage drop, low fuel, low oil pressure, or high coolant temperature.

The machine stops in the unlikely event that the brakes fail. When fuel supply gets below two gallons, the Kubota D-950 engine automatically shuts down.

Circle No. 199 on Reader Inquiry Card

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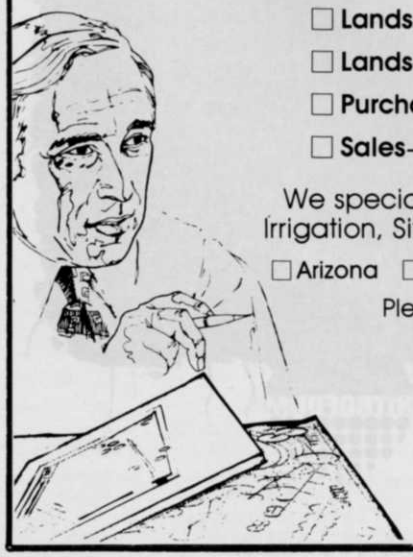

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Circle No. 138 on Reader Inquiry Card

Full color brochures detail turf equipment line

Two new full color brochures detailing products and sales are available from Exmark Manufacturing Company. The brochures focus on Exmark's line of turf care equipment. Parts manuals for Exmark five-speed and variable-speed commercial power mowers are also available.

The company has also published an operator's manual for its 32-, 36- and 48-inch mowers. All literature contains information on product specifications, performance, ratings, and details on accessory items.

Circle No. 200 on Reader Service Card

Wetting powder available as flowable formulation

Fermenta Plant Protection has begun manufacturing the pre-emergence herbicide Dacthal in a flowable formulation. The herbicide, previously only available as a wettable powder, comes in 2½ gallon containers and 55-gallon drums.

The flowable product allows for a more convenient control of crabgrass, spurge and a variety of annual grasses and broadleaf weeds in established turf and 120 ornamental plantings.

The flowable Dacthal has good turf tolerance, virtually no leaching, volatility or photo-decomposition when exposed to sunlight.

Circle No. 201 on Reader Service Card

Manual provides labels for chemicals, fertilizers

The 1987 edition of the Lesco Label Manual is available.

The 128-page manual provides specimen labels for 60 Lesco chemical and fertilizer combination products and their material safety data sheets. The manual also provides detailed information on fertilizers and lists grass seed available from the company.

According to the company, the manual gives customers information on uses and content of the products, and helps in product selection and application.

Lesco has also introduced an accurate, pocket-sized pH meter. Applicators and turf managers can take the pH Pen into the field and get laboratory-accurate measurements.

Using solid state circuitry powered by conventional wristwatch batteries, the Lesco pH Pen can give quick readings of spray tank solutions or soil slurries. It features a gel-filled electrode which measures pH from 2 to 12 with 0.1 unit resolution. Readings are displayed in large, easy-to-read liquid crystal characters.

The pH Pen is available separately or in a kit with all the supplies necessary to take readings, including calibration buffers and sample cups.

Circle No. 202 on Reader Service Card

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Harvard Full Flow Brass Angled Sill Cocks from American Granby are constructed of heavy brass made to meet rigid specifications. Each is individually inspected and tested, and has a stuffing box and notched flange for easy installation.

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Lebanon homogenous and SCU fertilizers are made from high quality raw materials to give you uniformly sized products. They've been formulated to work with drop-type or rotary spreaders—evenly and quickly, without clogging.

And, because they release nitrogen evenly, they give you the precise green-up and color you want.

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We feature over three dozen standard homogenous fertilizers, sulphur-coated urea blends and fertilizer/chemical control products. But we'll be happy to formulate an exclusive mix for your own unique soil needs.

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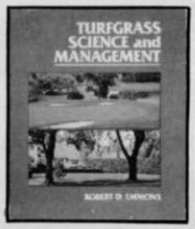
BOOKSTORE

625 - ADVANCES IN TURFGRASS ENTOMOLOGY
edited by Niemcyzk and Joyner
A complete account of the facts presented at the 1980 Symposium on Turfgrass Insects. 200 photographs, tables and graphs make this volume an indispensable reference for anyone connected with the turfgrass industry or research.
$24.95

010 - ADVANCES IN TURFGRASS PATHOLOGY
by Joyner and Larsen
Leading U.S. turf pathologists report on turfgrass diseases, phythium blight, snow molds, fairy rings, leaf spot of Kentucky bluegrass in Minnesota, initial and field fungicide screening, turfgrass disease resistance, etc. Contains new ideas on how to combat turfgrass problems. **$27.95**

645 - MANAGEMENT OF TURFGRASS DISEASES
by J.M. Vargas
Identifies turfgrass diseases by description and illustration. Includes a holistic approach to healthy turf and lawns. Presents practical management strategies for golf courses, lawns and athletic fields. 204 pages, illustrated. **$26.70**



630 - TURFGRASS: SCIENCE AND CULTURE
by James Beard
Comprehensive basic text and reference source used in many leading university turf programs. Includes findings of current research compiled from more than 12,000 sources. **$30.95**

605 - TURFGRASS SCIENCE AND MANAGEMENT
by Robert D. Emmons
Discusses the establishment and maintenance practices used by successful turfgrass managers. Deals with the relevant scientific theory and practical management skills. Provides guidelines for turf maintenance of golf courses, lawns, athletic fields, parks, cemeteries, sod farms. **$25.79**

640 - TURF IRRIGATION MANUAL
by James Watkins
A guidebook for engineers, architects, designers and contractors. Keeps pace with the latest developments in turf and landscape irrigation. Specific chapters devoted to rotary sprinkler design systems. Golf course design systems and expanded engineering and reference material. **$23.95**

615 - TURF MANAGEMENT FOR GOLF COURSES
by James Beard
Written by an eminent turfgrass researcher, this USGA sponsored text is an ideal reference and "how to" guide. Details all phases of golf course operations including course design and construction, turf management, course administration, irrigation, equipment and disease and pest control. Fully illustrated. **$52.75**

620 - TURF MANAGEMENT HANDBOOK
by Howard Sprague
Practical guide to turf care under both healthy and poor turf conditions. Chapters cover turf in cooler and warmer regions, fertilizer use, regular turf care, weed and disease control and special turf problems. Useful seasonal schedules for management of turf areas. **$19.00**

110 - TURF MANAGER'S HANDBOOK
by Daniel and Freeborg
This specially designed manual by leading turf specialists is a comprehensive, organized approach to turfgrass science and care. An easy, on-the-job reference for planning, purchasing, hiring, construction and plant selection. **$28.95**

305 - FUNDAMENTALS OF LANDSCAPING AND SITE PLANNING
by James B. Root
Covers everything from the evolution of the earth's surface and the primary needs and functions of plant life to site planning and the concept of contours and the methodology of organizing a landscape. Demonstrates environmental design techniques. **$29.50**

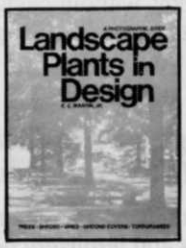
300 - LANDSCAPE DESIGN: A PRACTICAL APPROACH
by Leroy Hannebaum
Geared for the commercial designer/salesperson, this is a one-stop guide to the landscape design process. Covers the entire highly competitive field including design analysis techniques, pointers on land forms, specialized business landscaping methods, environmental design guidelines, specifications, estimations, bids. **$24.95**

370 - LANDSCAPE OPERATIONS: MANAGEMENT, METHODS & MATERIALS
by Leroy Hannebaum
An in-depth examination that combines technical training in landscape science with methods of accounting, business management, marketing and sales. Discusses effective methods for performing lawn installations, landscape planting and maintenance. Step-by-step accounting calculations are explained in simple terms. **$24.95**

365 - LANDSCAPE PLANTS IN DESIGN
by Edward C. Martin
An annotated photographic guide to the design qualities of ornamental plants and their aesthetic and functional use in landscape designing. Over 600 trees, shrubs, vines, ground covers and turfgrasses are described in non-technical language. Over 1900 photographs. Provides a basis for selecting the best plant materials for any particular use in landscape design. Contains detailed indexes that provide quick reference to particular design qualities and growing conditions. **$55.00**

375 - RESIDENTIAL LANDSCAPES
by Gregory M. Pierceall
An excellent reference for individuals involved in the design and development of plantings and constructed features for residential sites. Illustrations and actual residential case study examples are used to communicate graphic, planning and design concepts which are the focus of this text. **$29.95**

635 - IRRIGATION PRINCIPLES AND PRACTICES
by Hansen, Israelsen, Stringham
A new fourth edition of this highly successful textbook presents essential concepts pertaining to water conveyance, application, storage in the soil and use by plants. Basic underlying principles that govern irrigation practices are stressed.
$48.45



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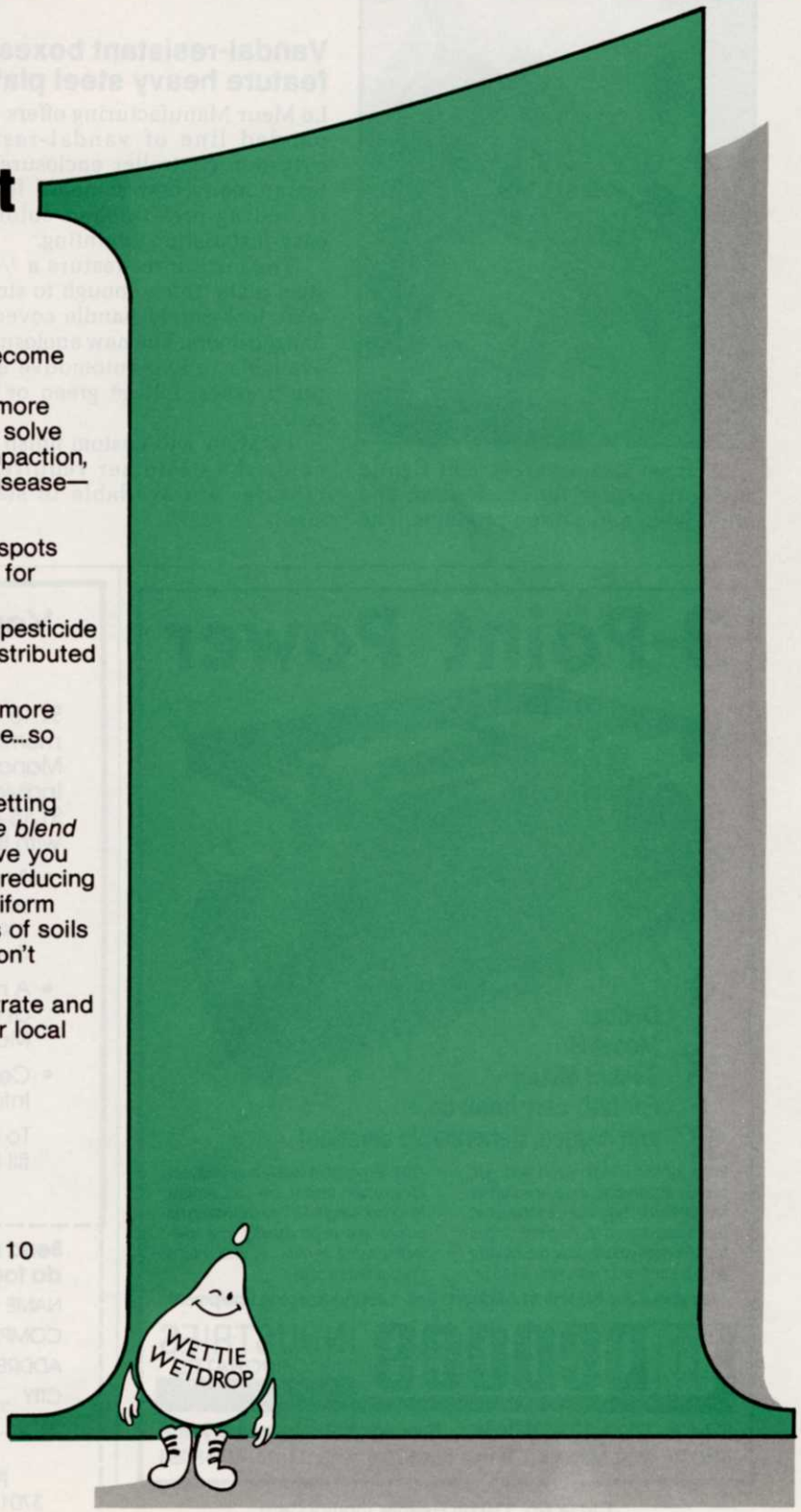


Circle No. 173 on Reader Inquiry Card

Pressure-sensitive tape can aid repair jobs

3M's Packaging Systems Division offers pocket-sized pads of pre-cut, 4x6-inch sheets of Scotch brand pressure-sensitive tape that can be quickly peeled and applied to make many taping jobs faster and easier.

A sheet can securely and tightly seal torn bags of fertilizer, seed, and other lawn and garden products. The tape is also ideal for laminating mailing tickets, protecting labels, covering stickers, or other shipping applications.

The tape pads are sold 20 pads to a packet, with eight packets to a case, providing 160 pads, or enough to perform 4,000 taping jobs. A packet fits easily into a uniform pocket.

Circle No. 190 on Reader Inquiry Card

Vandal-resistant boxes feature heavy steel plate

Le Meur Manufacturing offers an expanded line of vandal-resistant irrigation controller enclosures, featuring many new standard features, including pre-finished colors and easy-installation mounting.

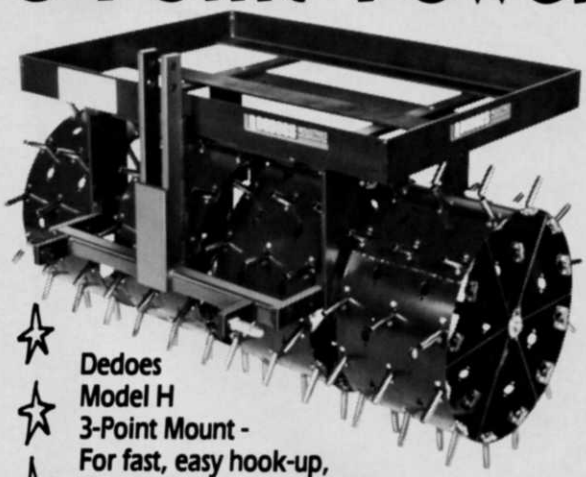
The enclosures feature a 3/16-inch steel plate (thick enough to stop bullets), lock-shield handle covers, and flanged doors. The new enclosures are available in two automotive enamel pre-finishes: foliage green or desert tan.

Le Meur will custom finish to any color the customer requires. Enclosures are available in stainless steel.

Installation is aided by a new anchor-bolt template which allows the unit to be mounted accurately on a concrete pad without using any additional tools. A 3/4-inch waterproof plywood panel permits the installer to place controllers or other equipment in any desired configuration.

Circle No. 191 on Reader Inquiry Card

3-Point Power



Dedoes Model H 3-Point Mount - For fast, easy hook-up, and rugged, dependable aeration!

From athletic fields, parks and golf courses to commercial use, the Dedoes Model H is the "big job" aerator that smart supervisors depend on. Patented, hinged tines for clean plug removal are standard on 2-3-4 or 5 drum units with 36-60 or 120 tines per drum. Heavy-duty solid steel construction utilizes low-cost cement blocks for weight. So if you're looking for power and dependability in a low-maintenance aerator . . . look into a Dedoes aerator today.

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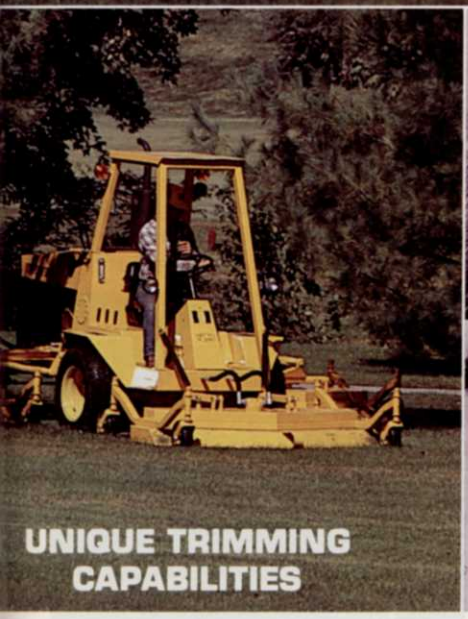

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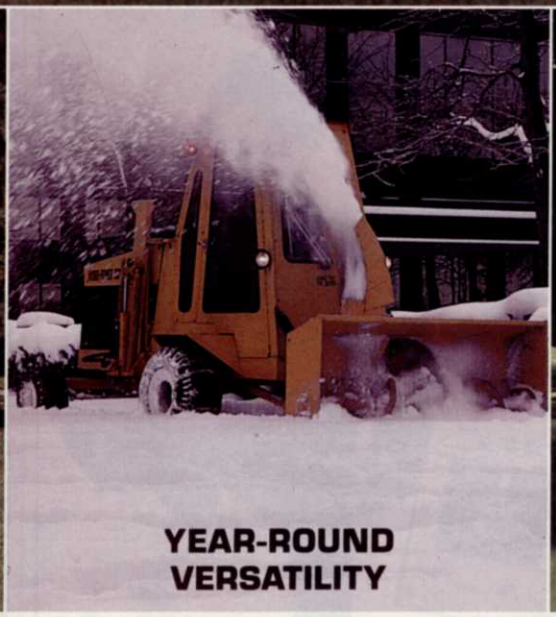

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Your search for a high capacity mower encompassing a one man operation is now concluded. The Hydro-Power 180 with its 15 foot hydraulically driven rotary mower has a mowing capacity of up to 11 acres an hour while incorporating rear wheel steering for maximum maneuverability. Cutting units are designed for maximum floatation and may be used individually or in any combination of the three.

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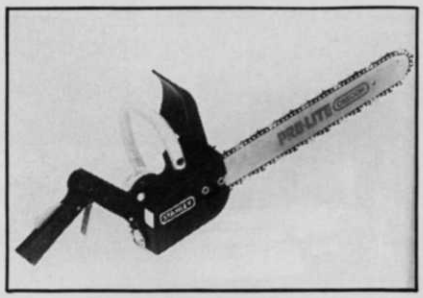
Hydraulic chain saw redesigned for safety

Stanley Hydraulic Tools, Milwaukie, Ore., has redesigned its hydraulic chain saw for safer, more comfortable operation. The CS06 includes a chain catcher to prevent backlash from broken chains, a forward hand guard and a new trigger to prevent accidental starts.

The hollow trigger handle stays cool without oil passage inside. The



assist handle is located and shaped for better control, and the chain oiler is adjusted externally.

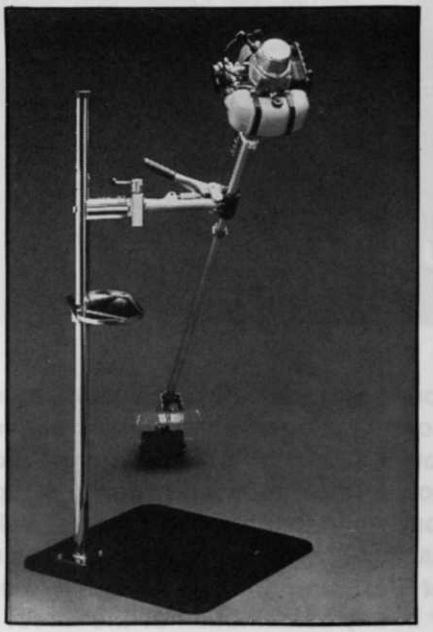
The CS06 accepts all standard bars. An adjuster for chain wear and guide plates keeps loose chain from jumping off the bar tail.

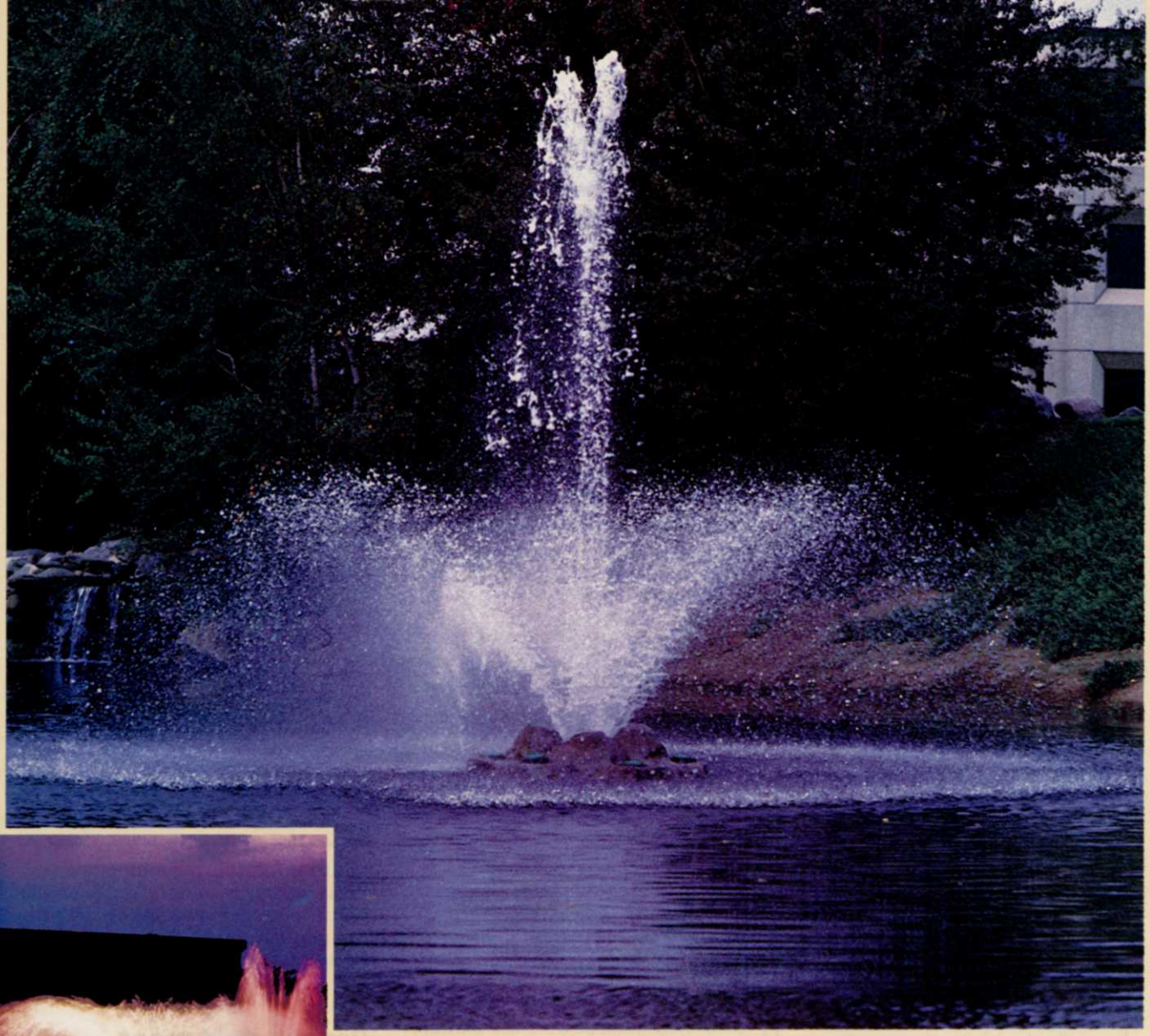
The saw is also available with a dual spool which allows the saw to be used as an open-center or closed-center tool. The CS06 is available in 12-, 15- and 20-inch cut lengths.

Circle No. 193 on Reader Inquiry Card

Stand can be used in trimmer repairing

A trimmer stand from Park Tool Co. originally was designed for the assembly and servicing of bicycles. But its versatility allows it to clamp hard-to-





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- Firmly anchors sod & turf covers — even on steep slopes.
- Sturdy cast aluminum construction is lightweight for easy use (weighs approximately 10 lbs.)
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hold lawn trimmers.

The stand, which comes in five models, has quick-acting, vinyl-coated, spring-loaded clamps suited for assembly, servicing and adjusting lawn trimmers.

A simple locking lever system allows for complete rotation of the trimmers. The stand is zinc-coated for good appearance. Models include a regular and deluxe floor model, a regular and deluxe bench mount and a wall mount.

Circle No. 194 on Reader Inquiry Card

Diesel-powered tractors have many applications

Massey-Ferguson has introduced four new compact tractors to meet the increasing demand for diesel-powered tractors under 40 hp.

The 1000 Series tractors include the 21 hp 1020 Hydro, the 1030 at 26 hp, the M-F 1035 at 31 hp and the 35 hp

1045. (All horsepowers are manufacturer's ratings.)

The new models replace the old 1030 and 1040 compacts, and join the current M-F 1010, 1010 Hydro and 1020. Each tractor is available in either two or four-wheel drive.

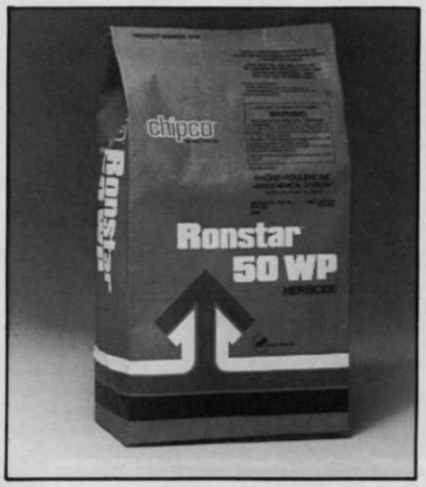
Applications include light construction, lawn care, gardening and landscaping.

Circle No. 195 on Reader Inquiry Card

Pre-emergence herbicide controls broadleaf weeds

Chipco Ronstar 50 Wettable Powder from the Agrochemical Division of Rhone-Poulenc is now available from turf and ornamental chemical distributors.

The pre-emergence herbicide, registered earlier this year by EPA, has a long residual for control of goosegrass, crabgrass and other broadleaf weeds. Ronstar 50 WP is a companion product to Ronstar Granules pre-emergence herbicide. The



addition of the powder gives turf grass managers and nurserymen the option of either spraying or applying dry granules.

Circle No. 196 on Reader Inquiry Card

Portable field scope cuts slide-making

The Macroscope 18-36 Zoom from RF Inter-Science, Huntington, N.Y., a wide field zoom macroscope, provides variable magnification of 18 to 36 times, and a positionally correct image in a field-usable unit.

The unit's construction ends the need for slide preparation. It can be

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- Hydrostatic drive on feed for instant speed & directional control
- Fold up feed apron now standard for safety & transport
- Hinged top housing for easy blade access
- Discharge chute rotates 360° & horizontally — no wrenches required
- Infeed 15° closer to curbside for operators safety
- New, more powerful feed motors
- 42" diameter cutter drum for power

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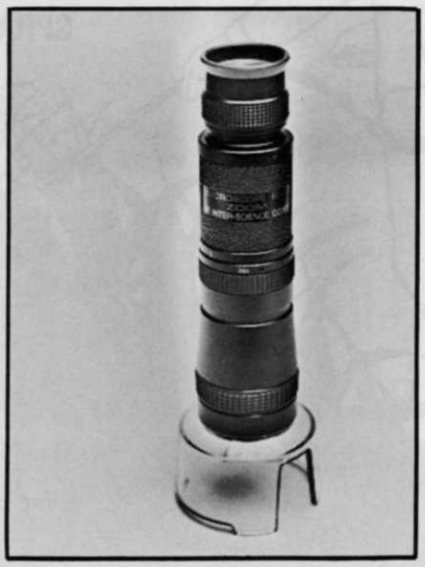
used on the hood of a car or a flat rock.

The roof prism optics provide a bright image with ordinary ambient light in most situations. For low light areas, field usable lighting accessories such as a battery-powered light table or a penlight clip, are available.

Using the Macromate I, the Macroscope 18-36 is adaptable to 35mm



SLR cameras, permitting photomicrography at 18 to 36 times magnifications in the field at a nominal cost without elaborate set-up.

The unit has a measuring reticle calibrated in both inches and millimeters enabling measurements to about 0.001 inch.

Circle No. 197 on Reader Inquiry Card

Sprayer is designed for difficult areas

The 200-052, 12 volt ATV sprayer from the Westheffer Company, is designed for hard-to-reach trees and turf areas.

The sprayer features a 12-gal. corrosion-resistant poly tank, a 12-volt

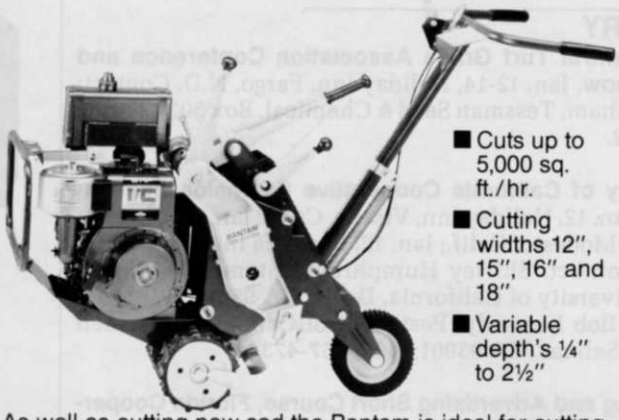
diaphragm pump, a pressure gauge and a heavy-duty toggle switch directly behind the operator's seat.

A handgun and hose assembly facilitates tree and shrub spraying, and a spray boom for turf covers an 80-inch spray swath.

Circle No. 198 on Reader Inquiry Card

TURFCO **BANTAM**

Sod-Cutter



- Cuts up to 5,000 sq. ft./hr.
- Cutting widths 12", 15", 16" and 18"
- Variable depth's ¼" to 2½"

As well as cutting new sod the Bantam is ideal for cutting dead, worn or weed infested turf and preparing the ground for installation of new sod. The design incorporates full complement of adjustment for blade depth and angle to meet the demands of different applications. The Bantam now features a 8HP Industrial/Commercial (I/C) engine.

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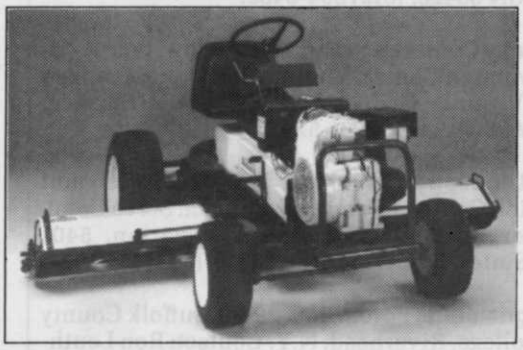
National

84" Triplex Reel Mower



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Features
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- 12 mph transport speed
- heavy duty rollers
- long life bed knives

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Circle No. 141 on Reader Inquiry Card

EVENTS

JANUARY

North Central Turf Grass Association Conference and Trade Show, Jan. 12-14, Holiday Inn, Fargo, N.D. Contact: Ed Evernham, Tessman Seed & Chemical, Box 5031, Fargo, ND 58102.

University of California Cooperative Extension Seminar Series, Jan. 12, Holiday Inn, Visalia, Calif.; Jan. 14, Chateau de Ville, Modesto, Calif.; Jan. 15, Bonanza Inn, Yuba City, Calif.. Contact: Shirley Humphrey, Entemology Extension, University of California, Davis, CA 95616; (916) 752-0470, or Bob Kennedy, Pest Control Computer, Hartnell College, Salinas, CA 93901; (408) 757-4734.

Marketing and Advertising Short Course, Florida Cooperative Extension Service, Jan. 13, Agricultural Center Auditorium, Sanford, Fla. Contact: Uday Yadav, Extension Director, 4320 S. Orlando Dr., Sanford, FL 32771; (305) 323-2500, ext. 182.

Short Course in Horticulture, University of California Agricultural Cooperative Extension, San Bernardino County, Jan 13-Feb. 12, Los Angeles, Orange and San Bernardino counties. Contact: Ed McNeill, 2492 E. Mountain St., Pasadena, CA 91104; (818) 798-1715.

San Diego Xeriscape Conference, Jan. 15-16, San Diego, Calif. Contact: Helen M. Stone, San Diego Xeriscape, 2950 Jamacha Rd., El Cajon, CA 92020; (619) 464-1980 Ext. 262.

Think Trees Conference, Jan. 15-16, Ramada Classic Hotel, Albuquerque, N.M. Contact: Robert Cox, 620 Lomas SW, Albuquerque, NM 87102; (505) 243-1386.

Golf Course Association Annual Conference, Jan. 19-23, Hilton Hotel Walt Disney World, Orlando, Fla. Contact: Don Nagode, Convention Chairman, 830 Cedar, Suite 226, Minneapolis, MN 55420; (612) 854-8482.

Virginia Turfgrass Conference and Trade Show, Jan. 21-23, Pavillion Convention Center, Virginia Beach, Va. Contact: J.R. Hall III, Virginia Cooperative Extension Service, Blacksburg, VA 24061; (703) 961-5797.

Tropical Plant Industry Exhibition, Jan. 22-24, Coconut Grove Exhibition Center, Miami, Fla. Contact: Steve Creel, Florida Nurserymen and Growers Association, 5401 Kirkman Rd., Suite 650, Orlando, FL 32819; (305) 345-8137.

Long Island Agricultural Forum, Jan. 29-30, Suffolk County Community College, Riverhead, N.Y. Contact: Ron Leuthardt, Cooperative Extension Association of Suffolk County, 246 Griffing Ave., Riverhead, NY 11901; (516) 727-7850.

Crossroads of the West Horticulture Exposition, Jan. 31-Feb. 2, Salt Palace Convention Center, Salt Lake City, Utah. Contact: Crossroads of the West Horticulture Exposition, 26 Pine St., Dover, DE 19901; (302) 736-6781.

FEBRUARY

Michigan Recreation and Park Association Annual Conference, Feb. 1-4, Hyatt Regency, Dearborn, Mich. Contact: MRPA, 2722 E. Michigan Ave., Suite 201, Lansing, MI 48912.

Circle No. 151 on Reader Inquiry Card

NEW 10 GALLON WS-490
MOTORLESS LIQUID CHEMICAL SPREADER

The 10 gallon Greens Wheelie is the most accurate and trouble-free liquid applicator manufactured. It features a motorless, ground-driven pumping system which does not require gasoline, batteries, cords or water hoses. It was designed for professional grounds maintenance on golf courses, parks, institutions and cemeteries.

The Greens Wheelie is used to apply liquid fertilizers, herbicides, fungicides, insecticides and growth regulators. It is equipped with large easy-to-push pneumatic type tires and a large 10 gallon tank with a wide mouth lid for easy filling.

The twin wheel pumps spray a fan of solution 6' wide, with an overlap at the center, at the rate of 1000 sq. ft. per gallon. The spray pattern is delivered from 2 nozzles in the form of tiny droplets providing a steady, uniform application which greatly reduces costly chemical drifting. The shut-off controls, located on the handle grips, allow the operator to regulate the nozzles independently.

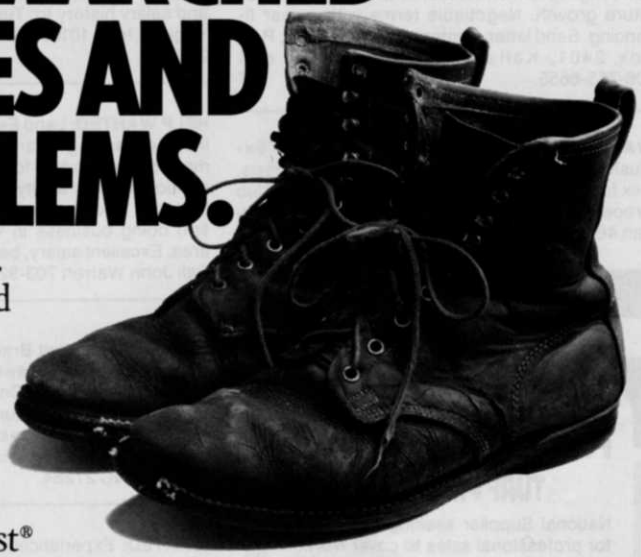
Corrosive resistant materials are used in the construction of the shut-off valves, pumping system and the 10 gallon tank allowing the use of chemicals which are harmful to traditional liquid applicators.

The WS-490 Greens Wheelie delivers chemical applications which are relatively unchanged by the speed at which the sprayer is pushed. The faster it is pushed, the faster it pumps. When the operator stops, the sprayer stops pumping. (Other models and sizes available.)

WHEEL SPRAY CORPORATION
Box 97, Delafield, WI 53018 — PH: (414) 646-8640

Circle No. 168 on Reader Inquiry Card

BEFORE WE DEVELOPED THESE PROBLEM-SOLVING TURFGRASS MIXTURES, WE MARCHED THROUGH ACRES AND ACRES OF PROBLEMS.



Nobody knows the troubles we've seen.

Our Northrup King turf specialists and researchers have hoofed through salt problems, soil compaction, disease, starved turf, baked turf, cleated-to-shreds turf, and dormant winter turf—all depressing sights. But it was a road well worth our travels.

The result is a complete line of Medalist® turfgrass formulas that meet the demands of the professional turf manager.

If you've been staring down at a turf problem, look up your solution here. And if you think it's a turf problem we haven't seen, just let us know.

Our business is putting your problems behind us.

MEDALIST TURF PRODUCTS ™

MEDALIST TURF PRODUCT	MAJOR AREAS OF USE	SPECIAL FEATURES
Athletic Pro and Athletic Pro II	For athletic turf.	Well suited for new seeding or overseeding. Fast establishing, traffic tolerant, rapid recovery. Both provide good footing.
Boulevard Mix	Any area with high pH (roadsides, sidewalks, boulevards, alkaline soils, etc.).	Contains 'Fults' and Dawson red fescue for beautiful salt-tolerant turf. Performs at low to high fertility levels.
Landscape Pro Mix	School grounds, cemeteries, golf course roughs, home lawns.	Establishes fast. Adapts to broad range of conditions and management levels. Low to moderate fertility needs.
Overseeder II Mix	Fairways, tees, athletic fields.	Rapid germination and establishment. Withstands heavy traffic and resists diseases. Penetrates compacted soils.
Medalist North Mix	Fairways, tees, cart paths, wear areas.	Quality turf for high traffic areas. Clean mowing and disease resistant.
Premium Sod Blend	Commercial sod production.	Exceptional dark green color. Tolerates light shade. Superior disease resistance. Rapid sod producer.
Renovator Pro Mix	Problem solver for heavy traffic areas (athletic fields, golf tees, and fairways).	Penetrates compacted soils and combats *Poa annua.* Adaptable to most geographic regions.
Medalist Brand Overseeding Products	Winter overseeding of dormant bermudagrass.	Establishes rapidly and evenly. Tolerates traffic while providing a superior putting surface. Smooth spring transition.

Ask your Northrup King distributor about Medalist Turf Products to solve your turf problems. Or write Northrup King Medalist Turf Products, P.O. Box 959, Minneapolis, MN 55440.

Circle No. 143 on Reader Inquiry Card

CLASSIFIEDS

RATES: $1.00 per word (minimum charge, $25). Bold face words or words in all capital letters charged at $1.25 per word. Boxed or display ads: $85 per column inch-1x (one inch minimum); $80-3x; $75-6x; $70-12x. Agency commissions will be given only when camera-ready art is provided by agency. For ads using blind box number, add $5 to total cost of ad. Send ad copy with payment to Dawn Nilsen, WEEDS TREES & TURF, 1 East First Street, Duluth, MN 55802 or call 218-723-9200.

BOX NUMBER REPLIES: Mail box number replies to: WEEDS TREES & TURF, Classified Ad Department, 1 East First St., Duluth, MN 55802. Please include box number in address.

BUSINESS OPPORTUNITIES

Excellent business opportunity in northwest Montana, near Glacier National Park. Owners desiring to retire from rapidly expanding bluegrass sod farm. High return on investment; high potential for future growth. Negotiable terms with owner financing. Send letter of interest to: Sod Farm, P.O. Box 2401, Kalispell, MT 59903, or call 406-755-6655. TF

WANT TO BUY OR SELL a golf course? Exclusively golf course transactions and appraisals. Ask for our catalog. McKay Golf and Country Club Properties, 15485 N. East Street, Lansing, Michigan 48906. Phone (517) 484-7726. TF

HELP WANTED

PROFESSIONAL SALES

TURF PRODUCTS

National Supplier seeking individuals for professional sales to cover Northeast, Mid-Atlantic and Midwest markets. Three to five years sales experience and college degree required. Excellent salary, benefits and car. Call (404)851-0380, or reply with resume to **LaRoche Industries Inc., 1100 Johnson Ferry Rd., NE, Atlanta, GA 30342, Attn: Jeanette Hawkins.**

Career Opportunities

A leader in the Wholesale Nursery Industry operating two major growing facilities and five re-wholesale yards through-out the northeast has openings for qualified Supervisor-Trainees through our ongoing recruitment program. If you enjoy a growth climate and have the attitude and skills to join a major company, we have a place for you. Send resume to or call Jim Fleming at:

The Robert Baker Companies,
1700 Mountain Road,
West Suffield, CT 06093,
203-668-7371

MANAGEMENT: Mid-Atlantic multi-branch established lawn care firm seeks branch manager. Position available 1-1-87 for aggressive, qualified applicant with proven record of success. Experience in operations, administration, field and office a must. Send full resume, salary, benefits and incentive requirements to WTT Box 408. 1/87

A rapidly growing lawn care company seeks an individual to perform liquid/granular lawn care applications, as well as lawn renovations. Job has potential to grow into sales and management position. Long hours required during peak periods. Solid background and experience in turf required. Top pay and benefits package. West suburban Boston. Call (617)444-0944 anytime. 1/87

LANDSCAPE MAINTENANCE DIVISION MANAGER for aggressive, multifaceted landscape contracting firm in Northern Virginia. Responsibilities include scheduling and on-site supervision of 15 crews, quality control, training and production. Five years experience in all phases of landscape contracting required. Send resume, references and salary history to: Turf Specialists of Northern Virginia, Inc., 10109 Giles Run Road, Lorton, VA 22079. 1/87

HELP WANTED: Land Estimator - KT Enterprises, Inc. is expanding its landscape installation department & growing firm for the right person with exceptional sales ability. Must be experienced in take-offs and costing. Progressive design/build firm doing business in Washington, D.C. Metro area. Excellent salary, benefits & growth potential. Call John Warren 703-922-8540. 1/87

WANTED: Assistant Branch Manager needed for a well established lawn care company in the Winston-Salem area. Only people with lawn care experience and/or a turf grass degree need to apply. Please send resume and references to Lawn Medic of the Triad, P.O. Box 769, Kernersville, NC 27284. 1/87

WANTED: Experienced highly motivated person to manage lawn mower sales and repair shop. Must be experienced in budgets, promotions and employee supervision. Sales in Toro, Yazzo, Green Machine and Wheel horse power equipment. Send resume and salary requirements to Stephen Hillenmeyer, c/o Hillenmeyer Nursery, 2370 Sandersville Road, Lexington, KY 40511. 1/87

Large Midwestern Landscape Contractor working with Fortune 500 clients seeking aggressive manager with experience in all aspects of commercial landscape maintenance. Excellent supervisory skills and ability to communicate with clients is required. This is a year round position with excellent benefits. Salary commensurate with experience. Send resume to Vidosh Bros. Inc., 36199 Mound Road, Sterling Heights, MI 48310-4798. Attention: Personnel Department. 1/87

Fleet Superintendent/Equipment Coordinator to perform maintenance on diesel/gas equipment 80 h.p to 1 h.p. and coordinate the use of equipment for a grounds maintenance service company throughout the state of Florida. Please send resume to Quandt-Ayer Enterprises, P.O. Box 271880, Tampa, FL 33688. 1/87

Sales and Service person needed in Virginia Beach area. Only experienced, licensed applicators with excellent customer service skills will be considered. Send resume and references to: Lawn Medic of Tidewater, P.O. Box 1786, Chesapeake, VA 23320. TF

Landscape Architects/Supervisors (project foremen) join a nationally acclaimed firm looking to expand into its second generation Long Island area supports a high budget landscape industry. Year round employment, company benefits and continuing education available. Experienced and aggressive people send resume to: **GOLDBERG & RODLER, INC.,** 216 East Main Street, Huntington, New York 11743. 1/87

Estimator/Salesperson: A diversified, growing, suburban Cleveland landscape firm has an opening for a landscape Estimator/Salesperson for commercial projects. Applicants must have experience in commerical landscape contracting and a college degree in a related field, ability to deal with landscape architects and general contractors needed. We are looking for a highly motivated individual with a proven record to help us grow. If you are qualified for this career opportunity, please send resume, work and salary history to Chagrin Valley Landscaping, P.O. Box 391002, Solon, OH 44139. 1/87

Tree Pruners and Climbers wanted for quality oriented, prominent company on Eastern Long Island. Excellent position, full-time, year round, wages commensurate experience and benefits. Reply to: Whitmore Worsley, Inc., P.O. Box 10, Amagansett, NY 11930. 1/87

Spray Technicians wanted for quality oriented, prominent company on Eastern Long Island. Knowledge of insects and diseases of ornamental trees desirable. Challenging position, full-time, year-round, wages commensurate experience and benefits. Reply to: Whitmore Worsley, Inc., P.O. Box 10, Amagansett, NY 11930. 1/87

Turf Specialist wanted for quality oriented, prominent company on Eastern Long Island. Manage lawn care program and crew. Excellent position, year round full-time, wages commensurate with experience and benefits. Reply to: Whitmore Worsley, Inc., P.O. Box 10, Amagansett, NY 11930. 1/87

Maintenance foreman to do quality commercial maintenance. Knowledge of turf and ornamentals and at least 3 years experience. Good salary and benefits. Reply to Country Greenery, Box 638, Pittstown, NJ 08867. 3/87

MANAGEMENT: Ever-Green Lawns Corporation, a division of the multi-national Hawley Group, Ltd. is looking for experienced lawn and tree care professionals. Please respond in writing only to Richard D. Niemann, Corporate Recruiter, Ever-Green Lawns Corp., 1390 Charlestown Industrial Drive, St. Charles, MO 63303. TF

COMMERCIAL LAWN TREE AND SHRUB CARE BRANCH MANAGER NEEDED. Largest commercial company in Washington D.C. area expanding its application division. Looking for person experienced in management of lawn and ornamental applications. Experience in both not a must, but desired. Full benefits, salary profit sharing, etc. Please send resume to WTT Box 410. 1/87

BRANCH MANAGERS: National leader in chemical lawncare services is seeking talented individuals for continued expansion. We need people with successful management experience with a background in the turfgrass industry, service industry and/or agricultural chemicals industry preferred. This key position will be responsible for directing the activities of all departments in providing high-quality lawncare service to our customers and maintaining customer satisfaction. To learn more about this growth opportunity with a leader in an exciting industry offering advancement, an excellent salary and full company benefits, send your resume with salary history to: Manager, Human Resources, Excelawn Corporation of America, P.O. Box 372, Crestwood, Kentucky 40014. 1/87

The City That Works Works With Woods

There's a lot of grass to mow in the Windy City, and Chicago's Park District uses rugged Woods mowers to help them cover a lot of ground.

But Woods mowers aren't designed just for large areas. In fact, we make mowers that cut swaths from 3 1/2 feet all the way up to 20 feet. Plus, we offer more rearmount and undermount models than any other manufacturer of tractor-powered mowers. New tractors or old, domestic or imported, Woods has a mower to fit the tractor and the job.

Send for complete specifications on the dependable line of Woods mowers today.

for 34 years the name to remember for quality and performance

WOODS

Division of Hesston Corporation
Oregon, Illinois 61061

Circle No. 169 on Reader Inquiry Card

Working managers experienced in all phases of lawn servicing looking for opportunity to grow. We offer lots of work, advancement opportunities to the right people, good to excellent compensation and security. Must be willing to relocate to the East coast (Washington D.C. area) or if you're the right person we will consider you for a new office from Virginia Beach to Northern New Jersey. Call or write to: Ron Miller, Super Lawns, P.O. Box 34278 Bethesda, MD 20817, 301-365-4740. 3/87

WINNERS ONLY: If you love the lawn care business, and are still looking for your personal security and comfort levels, send us your resume. Your experience should be in all phases of lawn care, management, customer sales and service. We are expanding our operations and will offer the right individual a unique once in a lifetime opportunity. When you prove your abilities, we'll guarantee your success. Send your confidential resume to: P.O. Box 5677, Rockville, MD 20855. 3/87

LANDSCAPE MANAGEMENT AREA SUPERVISOR WASHINGTON, DC AREA—Expanding, award-winning, people-oriented company seeks person to run 3 to 5 crews. Responsibilities include production, quality control, customer relations and sales. Experience required; horticulture or related degree preferred. Send resume to: Landscape Management, Ruppert Landscape, 17701 New Hampshire Avenue, Ashton, MD 20861. 1/87

MANAGERS NEEDED FOR LAWN CARE BRANCHES. One of the Northwest leaders in lawn care and tree care is looking for experienced successful managers to run a lawn care branch with tree service in the West. Salaries range from $29,000 to $40,000 per year. Send resume to WTT Box 415. TF

Need Manager for 650 acre sod farm in Northeast Illinois. Pierce Realty, 815-568-5252. 1/87

Landscape Maintenance. Premier Landscape Management firm specializing in commercial maintenance located in growing southern metropolis seeking qualified superintendent. Degree in Horticulture or 5 years experience in supervisory position desired. This position requires a highly motivated individual with good communication skills and strong personnel skills. Must have knowledge of turf and plant materials indigenous to the south, along with high standards in maintenance practices. Salary commensurate with experience and background. Excellent benefit package including retirement. Send resume along with photograph and three references to WTT Box 417. 1/87

OUTSTANDING OPPORTUNITY FOR AN ARBORIST with sales experience to join rapidly growing, full-service tree care company. All benefits and incentives. Call or send resume to **SAV-A-TREE OF WESTCHESTER,** c/o Daniel Van Starrenburg, P.O. Box 527, Armonk, NY 10504. 914-666-8202. 1/87

Working Partner Tree Division: Looking for an experienced manager who would like to be in business for himself but doesn't have the capital. We are an expanding lawn care company in Northern New Jersey looking for a proven manager. Experience in tree spraying, feeding, and antidessicant spraying. You will be given equity toward ownership, salary, and benefits. All replies kept confidential. Send resume and salary history to L.S.T. Industries, Inc., 297 Broadway, Hillsdale, NJ 07642 or call Mr. Tibbs - 201-666-1333. 1/87

LANDSCAPE FOREMAN— Rapidly growing midsouth landscape contractor seeks well motivated individual. No less than 3 years experience. Reinhold Landscape, 5345 Holmes Road, Memphis, TN 38118. 1/87

Branch Manager-Landscape Management: Excellent opportunity with expanding professional landscape management organization located in Houston, Texas. Must possess management and marketing skills and knowledgeable in equipment and maintenance operations. Salary/Bonuses commensurate with education, experience, and results. Send resume to WTT Box 409. 1/87

Aggressive landscape company has immediate opening for: Landscaping estimating/landscape foreman. Send resume, job responsibilities, salary history to: Fries Corp., 19777 S. McHenry Ave., Escalon, CA 95320. 1/87

Irrigation supervisor and foreman positions. Come join the leading landscape management company in its new irrigation division. Excellent pay,benefits, profit sharing, etc. We are one of the largest commercial companies in the metropolitan D.C. area. Respond to WTT Box 411. 1/87

LANDSCAPE MAINTENANCE OPERATIONS MANAGER— Rapidly growing midsouth landscape contractor seeks a quality minded, self-motivated individual to supervise its Landscape Maintenance Department. Necessary skills: horticultural knowledge and detail, production, scheduling and communication with clients. Salary and benefits commensurate with ability and experience. Reinhold Landscape, 5345 Holmes Road, Memphis, TN 38118. 1/87

Farm Advisor-Environmental Horticulture (Hdqtrs: Orange County): The University of California, Division of Agriculture and Natural Resources, Cooperative Extension is seeking a career-track academic candidate who is responsible for conducting an educational and applied research program in environmental hort. in wholesale nursery production and landscape hort. industry. A min. of Master's degree or equivalent in ornamental or environ. hort. or a related field and minimum of two years exp. working with or in the wholesale nursery and/or landscape industry is required. Exp. in CE or similar educational organization is desirable. Assure affirm. action in development and delivery of programs. Salary is the Asst. Advisor rank. Contact UC Coop. Ext. Personnel, 6th FL., 2120 University Ave., Berkeley 94720. 415/644-4320. Close 2/5/87. Refer to #A-85-202-R. Affirmative Action Equal Opportunity Employer M/F/H. 1/87

FOR SALE

SUNNY FLORIDA: West Palm Beach: Lawn Maintenance, 2 Person Operation Equipment, Training, Accounts & Leads. $55,000 plus in sales. $35,000 Net, 305-627-8141, Some Financing. 1/87

REEL GRINDER USED EXPRESS DUAL: Reel Grinder and Angle Master bed knife grinder. Both in excellent condition. Asking $9,500 for the pair. Call Mowing Machine Grinders and Reels, Inc. 205-222-2591. 1/87

77 GMC 2 ton spray truck, 1000 gallon tank recessed on flatbed. 1984 Hannay Reel, Meyers 2C95 pump, PTO, 100 gallon steel auxiliary tank. 76 Ford 1 ton spray truck, 750 gallon tank Hannay Reel, Meyers 2C95 pump, PTO, 50 gallon poly auxiliary tank. Call 317-284-1429 or 317-284-0265. 1/87

BROUWER HARVESTER OWNERS! ELECTRIC DEPTH CONTROL. Save time and money with improved quality control. Make depth-of-cut adjustments, on the move, with one button finger tip control. Allows you to cut longer rows through varying soil conditions. $895. 30-day satisfaction guarantee and full-year warranty. Write or call: Shattuck Turf Equipment, 1872 N.W. 82nd, Des Moines, IA 50322, (515) 278-5255. Patent pending. 3/87

2 Jim Dandy Tractors - $850.00 each; 2 Lawn-A-Mat stainless steel combines - $800.00 each; 1 tractor and 1 combine for parts - $350.00 each; 2 flatbed trailers - $150.00 each. Must Sell! (203) 325-3191. TF

TREE FERTILIZATION GUN tested on over a million square feet of trees and shrubs all over the U.S. Good to 500 psi, repairable, non-corrosive. Buy direct from manufacturer, $106.00 (shipping included). Arbor-Nomics, Inc., 585 Langford Lane, Norcross, GA 30071. (404) 447-6037. TF

ATTENTION GOLF COURSE SUPERINTENDENTS: Great Meyer Zoysia for your Fairways and Tees. Guaranteed Bermuda free. Beauty Lawn Zoysia (Cincinnati) 1-513-424-2052. 1/87

BALL BARRIER NETTING: Made of olefin fibers. 6 1/2 feet and 25 feet high. Strong and tough. Will not rust. Easy to handle. For Driving Ranges and Golf Courses. Keep golf balls from straying off-course. J. A. Cissel Mfg. Co., P.O. Box 339, Farmingdale, N.J. 07727. 1-800-631-2234. TF

HYDRO-MULCHERS AND STRAW BLOWERS New and used. **JAMES LINCOLN CORPORATION,** 3220 S. Jupiter Rd., Garland, TX 75041. (214) 840-2440 (TX), (800) 527-2304 (except TX). TF

LAWN SEED. Wholesale. Full line of top quality grasses. Improved bluegrass varieties, fine fescues and fine bladed ryegrasses. We specialize in custom mixing. Oliger Seed Company, 89 Hanna Parkway Akron, OH 44319. Call collect (216) 724-1266. TF

SPYDERS — used and rebuilt. Also a complete line of replacement parts for your Spyder. Call or Write: Mobile Lift Parts, Inc., 5402 Edgewood Rd., Crystal Lake, IL 60014. 815-455-7363. 3/87

COMPLETE LAWN CARE SPRAYING SYSTEM. 1984 Ford F250 custom skid mount. 400 gallon polypropylene tank. Electric Hannay hose reel, 300' of hose, D-60 diaphragm pump, 10 H.P. Briggs & Stratton. The system is in excellent condition and ready for use. $13,000. Call 319-359-6549. 2/87

For Sale: 320 acres sod, tree, fish farm. 240 acres standing crop, St. Aug., Raleigh, Centipede, Bermuda. 60 acres standing crawfish/catfish. 20 acres young landscape trees. Full line modern equipment. Possible owner finance. 713-451-1515, Houston, TX. 3/87

FOR SALE: 1- 1980 IH with 1200 high volume spray, 2 78 GMC, 1 ton for low volume spray. Reasonable priced for quick sale. 315-637-8660, Dave. 2/87

1984 O-GANG Jerry Clipper Mower, $6,500.00. Bossley's Dryer, P.O. Box 453, Bay City, TX 77414. 409-245-2043. 1/87

FOR SALE: 1980 Toro Parkmaster HTN, 7 gang, 7 reel, 7 blade; 1980 FMC D020 300 gal. sprayer; 1980 Foley reel grinder, model #388 and a 1980 Foley bedknife grinder, model #384. For more information call 305-225-1200, FL. 1/87

Vermeer 630 Stump Grinder. Excellent condition and well maintained. Area Code (717) 898-8591 or 898-7443. 1/87

BOWIE HYDRO-MULCHERS AND STRAW BLOWERS, New and used. Landscape Supply, Ltd., P.O. Box 22092, Greensboro, NC 27420. (919) 292-2922. 1/87

FINN HYDROSEEDERS & MULCH SPREADERS. New & Used. Wolbert & Master, Inc., P.O. Box 292, White Marsh, MD 21162, 301-335-9300. 6/87

SPYDERS - Used and reconditioned 2500 S. Cooper, Arlington, TX 76015. 817-261-7346 Mark. 2/87

ZOYSIA MEYERS Z-52 SOD OR SPRIGS. EXCELLENT QUALITY DELIVERED ANYWHERE AT REASONABLE PRICES. DOUBLE SPRINGS GRASS FARM, SEARCY, AR. (501) 729-5691. 5/87

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500 gallon Lawn Sprayer with 50 gallon auxiliary tank mounted on HD tandum trailer. New 300 foot hose/electric Hannay hose reel/5 HP brakes & stratton/hypro pump. Very good condition. Asking $2500. Phone 815-699-7701, Days. 1/87

FOR SALE: 1981 Roseman 7 unit Hydra-gang mowing unit. Complete to mount on your tractor or use for parts and verticut units. $4,000. 301-722-6601, MD. Ask for Phil. 1/87

1982 BROUWER FORK LIFT: Diesel Model # HH3500PD. Good condition, $9,995. HAMILTON SOD CO. LTD. RR # 1, Mount Hope, Ontario, CANADA, 1-416-389-9050. 3/87

Golf Course Utility Vehicles: The City of Industry, California, will receive sealed bids for 21 golf course utility vehicles no later than Tuesday, February 10th, 1987 at 10 a.m. P.D.T. For specifications and information, please call 818-333-2211 or write to: Civic-Recreational-Industrial Authority, 15651 East Stafford Street, City of Industry, CA 91744. 1/87

Olathe 48HL sweeper 400 hours, 1984 model, like new, $5,500. Two hustler model 295 mowers with 72 deck, asking $5,500 for 1984 model or $3,500 for 1983 model. 803-879-3265. 2/87

Spray Trucks: 1980 GMC - series 6,000 350 V8 4 speed and 2 speed axle. Units are equipped with 1,200 gallon Tuflex fiberglass tanks, mechanical agitation, 10 GPM Bean pump, 50 gallon side tank, 8HP Kohler engine drive, Haney electric hose reel and detachable 1,200 lb. capacity granular fertilizer box. $10,500. Call Jerry Mykietka, 1-312-932-8668. 1/87

NEW LAWN CARE SPRAY UNITS. Tankers, trailers or skid units, **BUILT TO YOUR SPECS.** Placed on new or reconditioned trucks or trailers. Call today with your specifications for a price quotation. No obligation. (515) 829-3211. 1/87

Landscape maintenance business for sale. Large commercial accounts and equipment. Asking 175K - no brokers. 914-353-1286. 2/87

Landscape Design RUBBER STAMPS
FREE BROCHURE
Landscape Design Kits
Interior Plant Sets
Tree Stamps Books
AMERICAN STAMP CO.
12290 Rising Rd., suite 200-w
Wilton, CA 95693 (916) 687-7102

USED EQUIPMENT

BUCKET TRUCK: Hi Ranger 65′, 57′, 50′. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Parkway Equipment Company, 633 Cecilia Drive, Pewaukee, WI 53072. 414-691-4306. TF

NEW AND USED EQUIPMENT—Asplundh, Hi Ranger and Lift-all forestry bucket trucks, Chipmore wood chippers. Mirk, Inc., (216) 669-3567, (216) 669-3562, 7629 Chippewa Road, Orrville, Ohio 44667. TF

Reconditioned BIG **JOHN TRANSPLANTERS,** Models 60, 78,88 - several to choose from. Call or write for detail sheet. **BIG JOHN,** South Central Region, 323 Crowley Road, Arlington, TX 76012. 817-277-6745. 2/87

BUCKET TRUCKS, Straight Stick, Corner Mount and Knuckle Boom Cranes. Brush Chippers - New Morbark Disc Type, New Woodchuck Drum Type. Best prices anywhere. Used Chippers - Asplundh, Woodchuck, etc. 2 to 8 usually in stock. Sprayers, Dumps, Stakes, Log Loaders, Crew Cab Chip Box Dumps, Railroad Trucks, 50 in stock. Sold as is or reconditioned. Opdyke's, Hatfield (Philadelphia Area) 215-721-4444. TF

WANTED

Evergreen Lawns, a division of the Hawley Group Ltd., an international service company doing in excess of a billion dollars in sales, wants to acquire lawn care companies of all sizes. All inquiries strictly confidential. Please contact Steve Hirshmugl, Director of Finance and Acquisitions, Evergreen Lawns Corp., 1390 Charlestown Industrial Drive, St. Charles, MO 63303. 314-946-9700. 2/87

Wanted to buy **HYDRO SEEDER.** Please send photo. Johnson Hydro Seeding Corp., 13751 Travilah Road, Rockville, Md. 20850 301/340-0805. TF

WANTED: Large Lindig and Royer Shredders. Lewis Equipment. 320 Third Street S.W., Winter Haven, FL 33880. (813) 294-5893. 4/87

WANTED TO BUY: Used Hahn Multi Pro 44 spray vehicle. With or without spray unit. Any condition. Contact: Pete at (312) 349-3344. 1/87

ORKIN LAWN CARE

Wants to acquire lawn care/pest control companies doing $1,000,000 or more annual revenue. Sell us your business. Stay and grow with us if you wish. Reply to Gordon Crenshaw (404) 888-2770.

POSITION WANTED

Available Spring 87. Male, 28, married, licensed arborist, mechanical/horticultural degree, veteran, managerial and technical experience. ISO 1st class, tree, landscape, or nursery organization. Flexible to your needs. 301-465-8626. 1/87

EMPLOYMENT OPPORTUNITIES

EDUCATIONAL OPPORTUNITIES—Learn Golf Course Superintending, Park Supervision, Irrigation Management, Landscape Contracting. Fully accredited, VA approved, expanded faculty and facilities: major ongoing turfgrass research project. Many job placement opportunities, for information contact: Department of Golf Course Operations Landscape Technology: Western Texas College, Snyder, Texas 79549. 1/87

MISCELLANEOUS

EQUIPMENT DEALERS: National manufacturer seeking aggressive nationwide coverage in high growth areas. For full catalogue and marketing information please respond to WTT Box 413. 2/87

BUY DIRECT AND SAVE UP TO 75% on a full line of commercial lawn maintenance equipment, engines, parts and accessories from **LANDSCAPERS SUPPLY CORP.** Call us **TOLL FREE 1-800-222-4304,** and ask for our **free catalog.** 1/87

ATTENTION! LAKE CITY COMMUNITY COLLEGE GOLF & LANDSCAPE ALUMNI: We need your current address - Please send address and phone number to: John Wildmon, c/o Lake City Community College, Rt. 3, Box 7, Lake City, FL 32055. 1/87

FREE PARTS CATALOG—If you own a 36″—48″—52″ walk-behind mower and you feel you're paying too much for parts, call Preco Distributors toll-free and request our parts catalog. **BELTS, BLADES, GRASS CATCHERS, WHEELS AND LOTS MORE!** Replacement parts that fit: **BOBCAT, BUNTON, KEES, EXMARK & OTHERS.** 1 day shipping coast to coast available. All parts carry a 90-day warranty. Don't wait, call 24 hours a day. **TOLL-FREE 1-800-428-8004, in Mass. 413-596-5505. PRECO DISTRIBUTORS, 2400 BOSTON ROAD, WILBRAHAM, MA 01095.** TF

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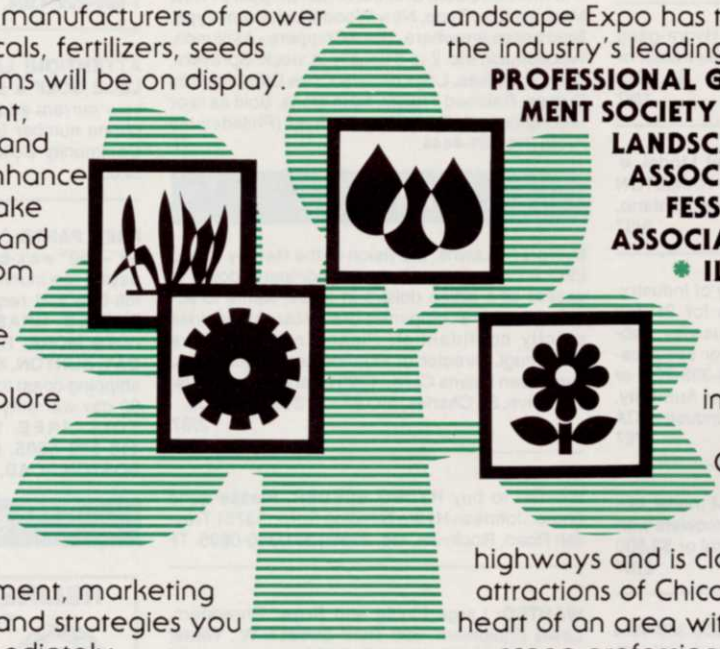

Landscape Expo has the active support of the industry's leading associations: **• THE PROFESSIONAL GROUNDS MANAGEMENT SOCIETY • THE ASSOCIATED LANDSCAPE CONTRACTORS ASSOCIATION • THE PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA • ILLINOIS LANDSCAPE CONTRACTORS ASSOCIATION.** Landscape Expo is in the right place too. O'Hare Exposition Center in Rosemont, Illinois is convenient to airports, major highways and is close to the sights and attractions of Chicago. O'Hare is at the heart of an area with over 16,000 landscape professionals within 300 miles.

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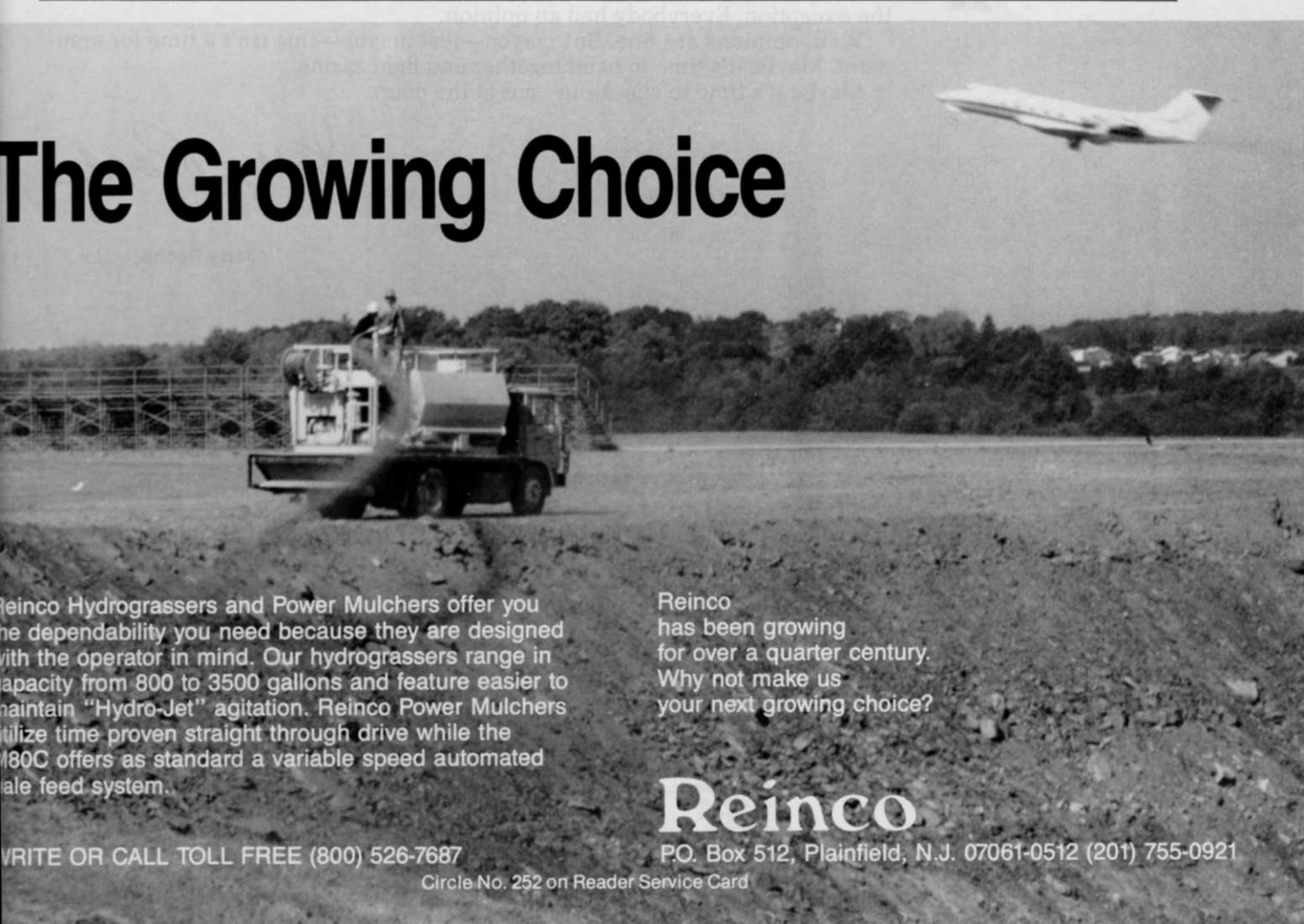

Check your ego at the door

In the spring of 1984, shortly after the nationally televised Grammy Awards, a group of dedicated musicians spent the wee small hours of the morning together.

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The green industry is faced with a similar situation today. Golf course superintendents may not realize it. Park superintendents may not realize it. Landscape contractors may not realize it.

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Well, opinions are fine. But maybe—just maybe—this isn't a time for argument. Maybe it's time to band together and fight as one.

Maybe it's time to check our egos at the door.

Jerry Roche

Jerry Roche, editor

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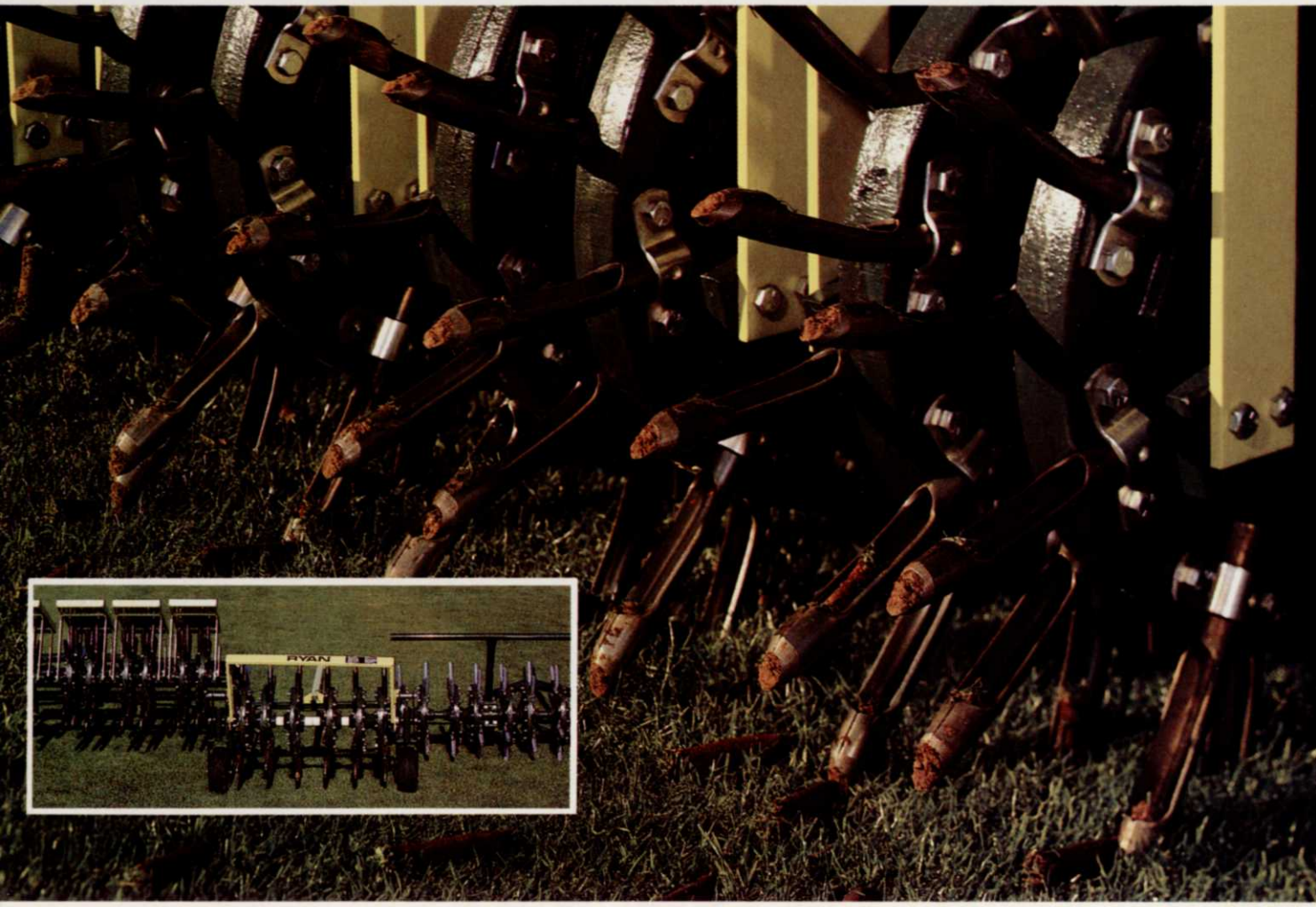

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